EV-C770E/S880E
RMT-V130H/V134

SERVICE MANUAL

AEP Model

Photo : EV-S880E/RMT-V134

Remote commander is available as a unit, See page 159 for repair parts.

video Hi8

U' MECHANISM

For MECHANICAL ADJUSTMENT, refer to the "8mm Video MECHANICAL ADJUSTMENT MANUAL III (U MECHANISM)" (9-972-732-11).

SPECIFICATIONS

System

Video recording system	Rotary two-head helical scanning FM system
Audio recording	Rotary head, FM system (2 channels)
Video signal	PAL colour (System B and G), CCIR monochrome signals 625 lines
Usable cassette	8mm video format cassettes
Tape speed	SP: approx. 20.051mm/sec. LP: approx. 10.058mm/sec.
Maximum recording time	SP: 2 hours LP: 4 hours (with Sony E5-120)
Fast-forward and rewind time	Approx. 4.5 minutes (with Sony E5/P5-90 cassette)
Tuner section (EV-S880E only)	
Channel coverage	VHF channels E2-E12 (A to H only for Italy) CATV channels S01-S05 CATV channels S1-S20 HYPER S21-S41 UHF channels E21-E69
RF output signal	UHF channels E30-E39
Aerial input	75-ohms asymmetrical

Inputs and outputs

Video input	LINE IN 1/2 VIDEO: (phono jack) (1 each) Input signal: 1 Vp-p, 75 ohms, unbalanced, sync negative
Video output	LINE OUT 1 VIDEO: (EV-S880E) LINE OUT 1/3 VIDEO: (EV-C770E) (phono jack) (1) Output signal: 1 Vp-p, 75 ohms, unbalanced, sync negative LINE OUT 2 EURO-AV: 21-pin (pin 19)
S VIDEO input	LINE IN 1/2 S VIDEO: (4-pin, mini-DIN) (1 each) Luminance signal: 1 Vp-p, 75 ohms, unbalanced, sync negative Chrominance signal: 0.3 Vp-p, 75 ohms, unbalanced

—continued on next page—

MICROFILM

Hi 8 VIDEO CASSETTE RECORDER

SONY

S VIDEO output	LINE OUT 1 S VIDEO: (4-pin, mini-DIN) (1) Luminance signal: 1 Vp-p, 75 ohms, unbalanced, sync negative Chrominance signal: 0.3 Vp-p, 75 ohms, unbalanced LINE OUT 2 EURO-AV(S): 21-pin (pins 15 and 19)
Audio input	LINE IN 1/2 AUDIO: (phono jack) (2 each) Input level: –7.5 dBs Input impedance: more than 47 kilohms
Audio output	LINE OUT 1 AUDIO: (EV-S880E) LINE OUT 1/3 AUDIO: (EV-C770E) (phono jack) (1) Standard impedance: –7.5 dBs at load impedance 47 kilohms Output impedance: less than 10 kilohms LINE OUT 2 EURO-AV: 21-pin (pins 1 and 3)
CONTROL S IN	(mini jack)
CONTROL L	(3-pin mini-mini jack)

Timer (EV-S880E only)

Clock	Quartz lock
Timer indication	24-hour digital indication
Timer setting	Only for recording 6 programmes/1 month max.

General

Power requirements	220-230 V AC, 50 Hz
Power consumption	29 W(max.) (EV-S880E) 24W (max.) (EV-C770E)
Operating temperature	5°C to 40°C (41°F to 104°F)
Storage temperature	–20°C to 60°C (–4°F to +140°F)
Dimensions	Approx. 430 x 92 x 325 mm (w/h/d) Approx. 17 x $3^{5}/_{8}$ x $5^{1}/_{8}$ in
Mass	Approx. 4.8 kg (10 lb) (EV-S880E) 4.6 kg (10 lb) (EV-C770E)

Remote Commander RMT-V134 (EV-S880E) RMT-V130H (EV-C770E)

Remote control system	Infrared control
Command mode	VTR 1, 2 or 3
Power requirements	3V DC 2 IEC designation R6 batteries

Design and specifications are subject to change without notice.

Note

This appliance conforms with EEC directive 87/308/EEC regarding interference suppression.

Supplied accessories

- Remote Commander RMT-V134 (1) (EV-S880E)
  RMT-V130H (1) (EV-C770E)
- IEC designation R6 batteries (2)
- Coaxial cable (1) (EV-S880E)
- LANC cable (1)
- AV (Audio/video) cable (3 phono to 3 phono) (1)
- S VIDEO connecting cable (1)
- Plastic adjuster (1) (EV-S880E)
- Mains lead (1)

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

TABLE OF CONTENTS

SECTION 1
SERVICE NOTE

1-1. REMOVAL OF CASSETTE AT FAILURE WITH CASSETTE INSERTED

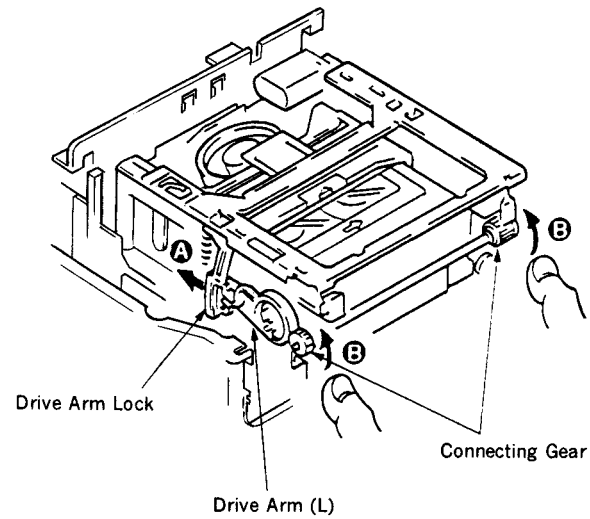
Ⓐ If tape is wounded on the drum and it cannot be removed: Rotate the capstan motor wheel in either direction and rotate the S or R reel to house the tape. Then, perform Procedure Ⓑ.

Ⓑ If tape is housed in the cassette half and cannot be removed:

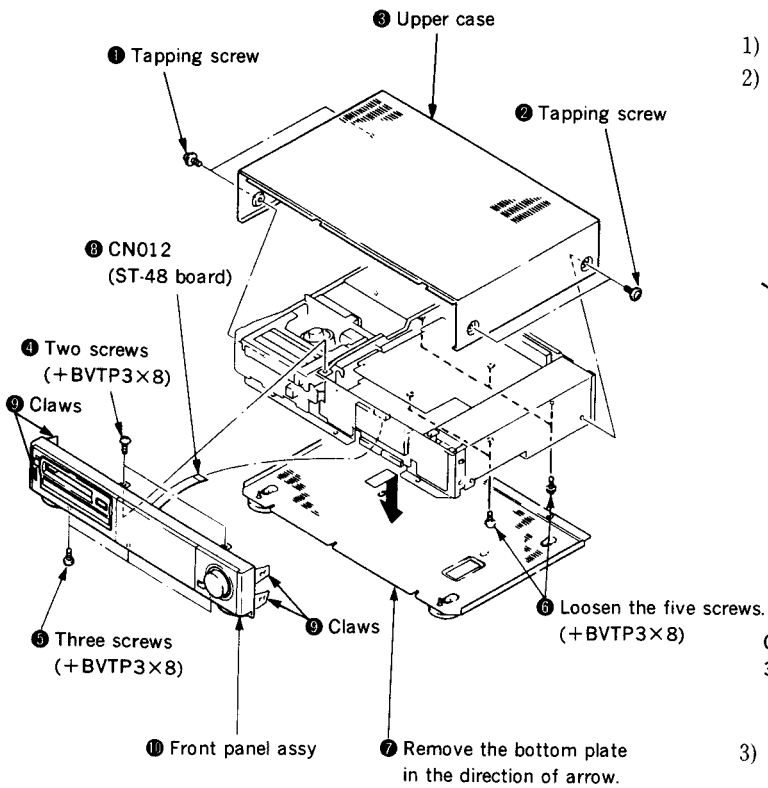
① Remove the MD block. (For removal, refer to Section 3-8.)

② Release the drive arm lock from the drive arm (L) located between the L frame and the left side of the cassette controller in the arrow direction Ⓐ.

③ Rotate the connecting gear in the arrow direction Ⓑ with both the thumbs.

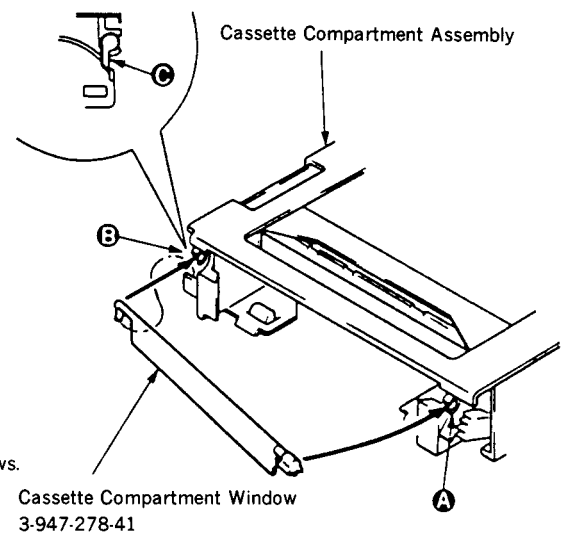


1-2. REPLACEMENT OF EXTERNAL PARTS



1-3. REPLACEMENT OF CASSETTE DOOR ASSEMBLY

1) Remove the front panel.
2) First undo Ⓐ portion toward you and then undo Ⓑ.



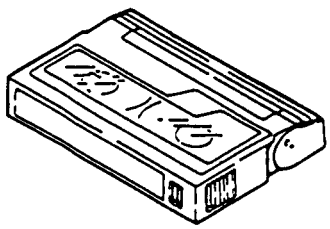
3) When installing, as shown above, first put in Ⓑ portion by setting the claw Ⓒ. Then, put in Ⓐ portion and install so that the door hangs almost vertically.

1-4. CLEANING OF VIDEO HEAD AND RUN SYSTEM

Method 1

〔Cleaning Method with Cleaning Tape〕

- A cleaning cassette should be used. (When using, the attached manual for the cleaning cassette should be thoroughly read.)



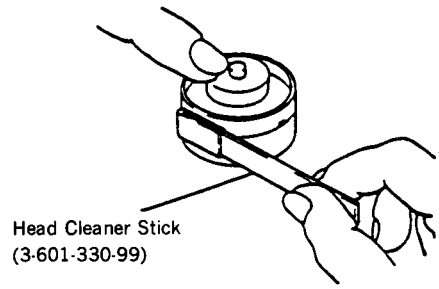
Method 2

〔Cleaning Method with Cleaning Liquid〕

①Remove the upper case of the video deck.

②Apply cleaning liquid to a head cleaner stick.

③As shown in the right figure, press the head cleaner stick lightly. Turn the rubber of the rotary upper drum gradually and clean the video deck.



〔Cleaning Method for Run System〕

①Apply cleaning liquid to a head cleaner stick.

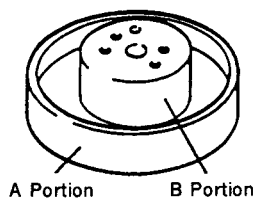
②Clean the guides which tape touches directly and the pinch roller with the head cleaner.

1-5. REPLACEMENT OF UPPER ROTARY DRUM

Method 3

Caution

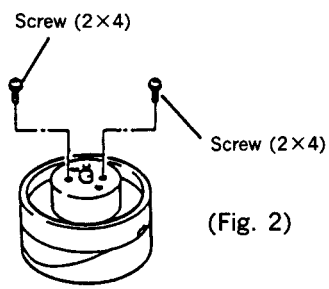
- Particular care must be taken when handling the video head and the terminals
- When handling the rotary upper drum, do not touch the side (A portion) and hold the top (B portion) (See Fig. 1)



(Fig. 1)

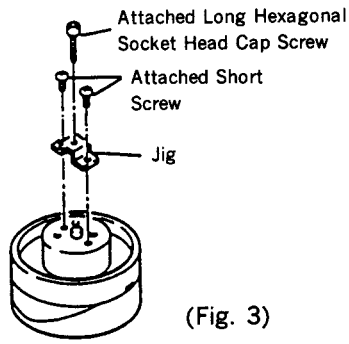
Removal of Rotary Upper Drum

①Remove two screws (2×4) (See Fig. 2).



(Fig. 2)

②Fix the jig (supplied with the spare rotary upper drum) with the two attached short screws. Then, put the attached long screw into the jig until the rotary upper drum may be removed (See Fig. 3).

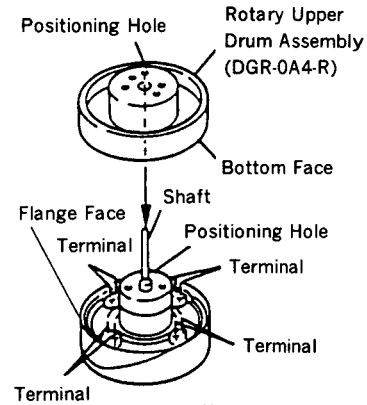


(Fig. 3)

Installation of New Rotary Upper drum

①Clean the flange face and the bottom face of the new rotary upper drum (See Fig. 4).

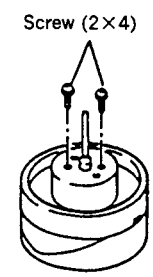
②Insert the shaft attached to the jig into the positioning hole in the lower drum. Then, put the shaft through the positioning hole in the new rotary upper drum and set the drum lightly.



(Fig. 4)

③With the shaft inserted into the positioning hole, push into the upper drum lightly with a hand. If the drum is not allowed to be bottomed, alternately tighten two screws (2×4) gradually and install the drum (See Fig. 5)

④Pull out the shaft inserted. If the shaft is not allowed to be withdrawn smoothly, go back to Step ② and redo the procedure.



(Fig. 5)

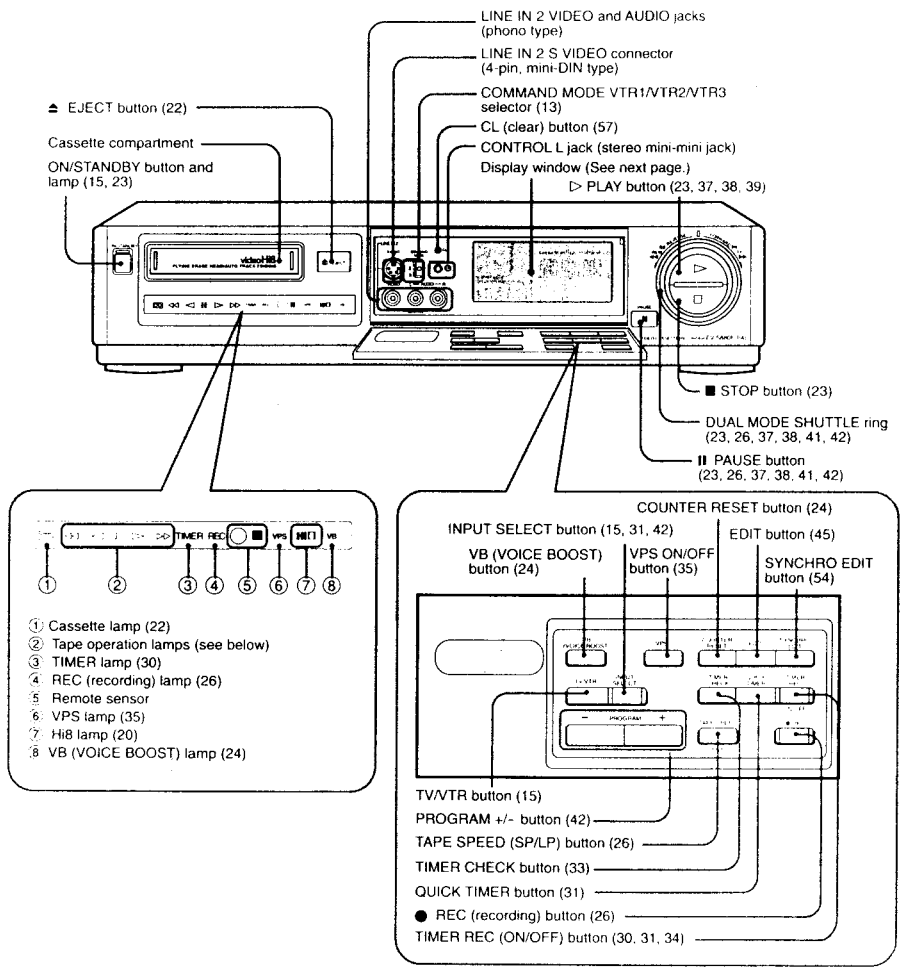
⑤Once the drum has been replaced, clean the video head and the run system with a head cleaner stick (See "Cleaning Method 2 for Video Head and Run System).

This section is extracted from EV-S880E instruction manual.

Identifying the Parts and Controls

Front Panel

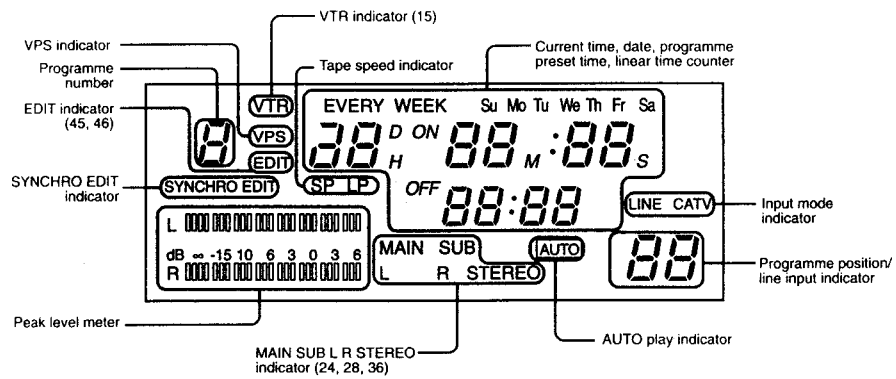
The function of each control is explained on the page indicated in parentheses ( ).



REC	Recording	◄	Playback, double speed, slow playback (reverse)	► ►►	Picture search, locked picture search (forward)
REC ❚❚	Recording pause	►►	Fast forward	◄◄ ►	Picture search, locked picture search (reverse)
►	Playback, double speed, slow playback (forward)	◄◄	Rewind	◄◄ ► ►► AUTO	AUTO play AUTO mode starts operation in the display window
❚❚►	Playback pause				

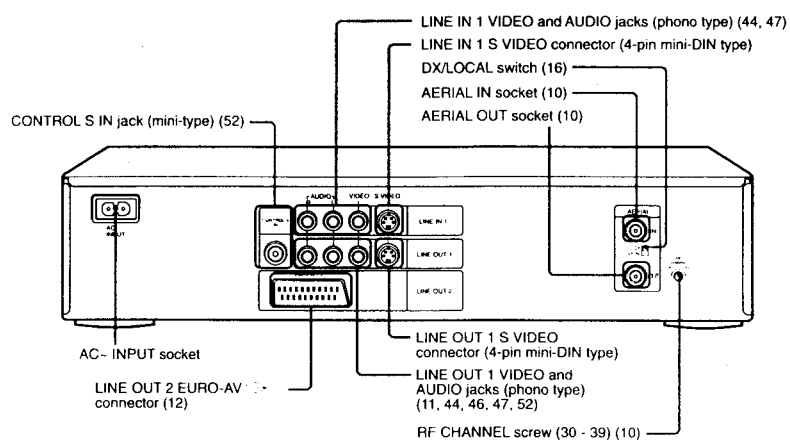
Display Window

Each indication is explained on the page indicated in parentheses ( ).



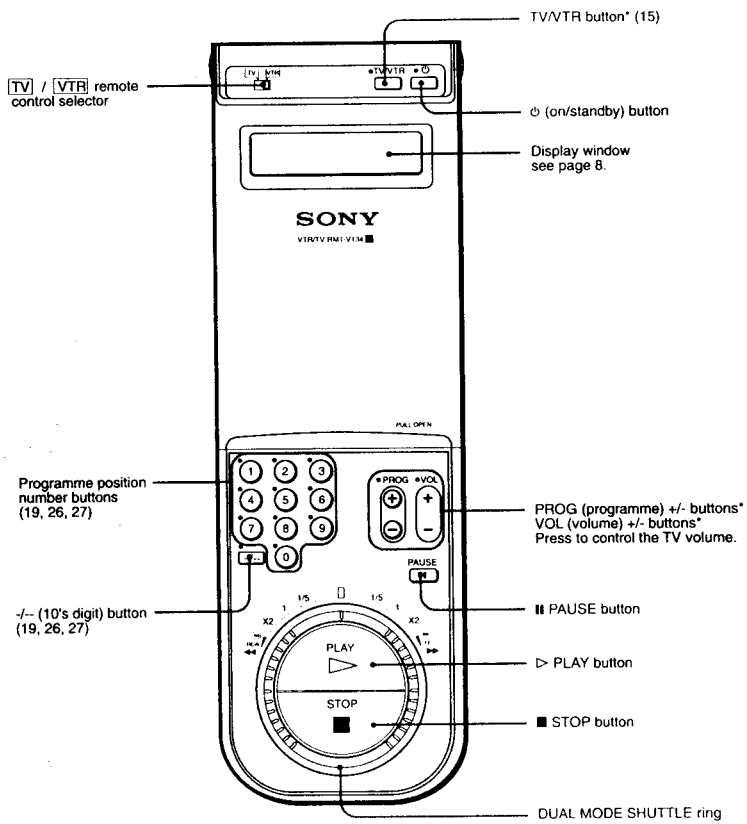
Rear Panel

The function of each control is explained on the page indicated in parentheses ( ).



Remote Commander

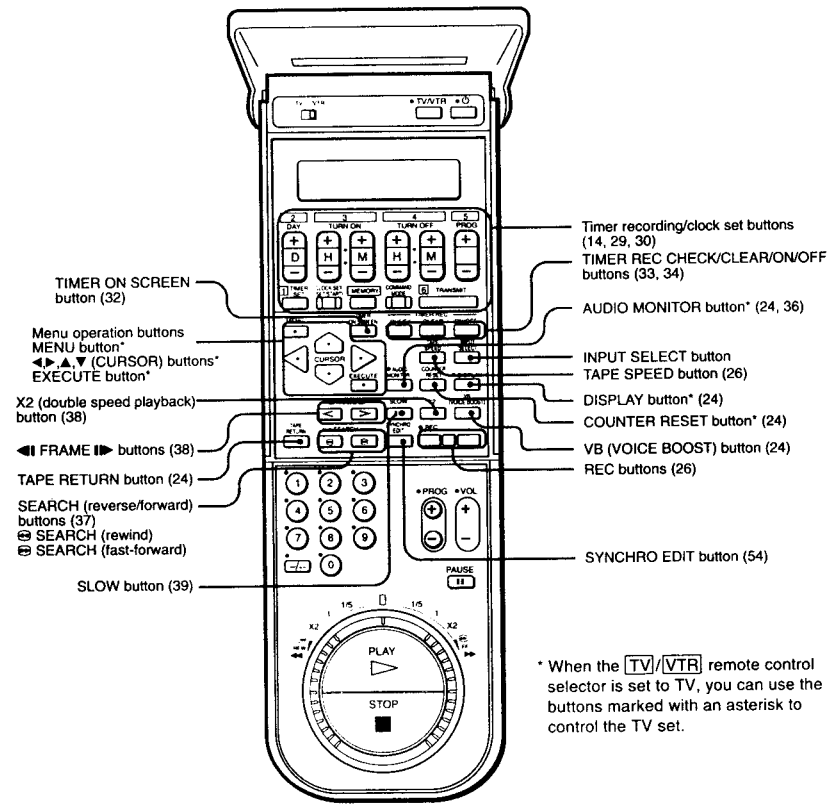
The function of each control is explained on the page indicated in parentheses ( ).



* When the TV/VTR remote control selector is set to TV, you can use the buttons marked with an asterisk to control the TV set.

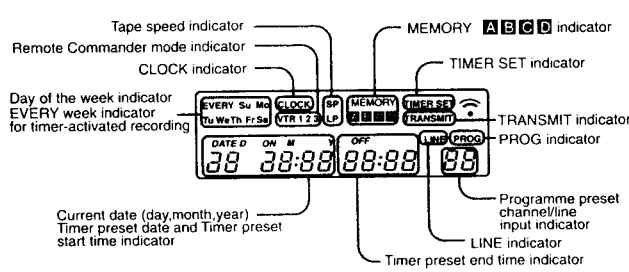
Remote Commander

The function of each control is explained on the page indicated in parentheses ( ).



* When the TV/VTR remote control selector is set to TV, you can use the buttons marked with an asterisk to control the TV set.

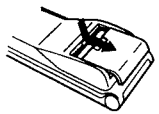
Display Window of the Remote Commander



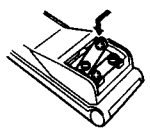
Preparing the Remote Commander

Inserting Batteries

1



2



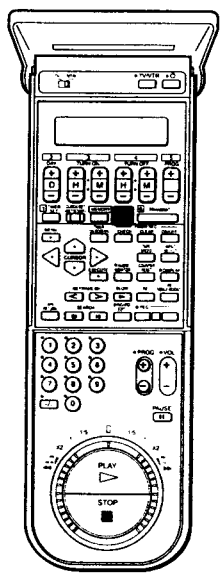
1 Open the lid.

2 Insert two size R6 (size AA) batteries with the polarity lined up correctly.

3 Close the lid.

Notes on handling the batteries

- With normal use, the batteries should last for approximately three months.
- If you do not use the Remote Commander for an extended period of time, remove the batteries to avoid possible damage from battery leakage.
- Do not use a new battery with an old one, or different types of batteries.

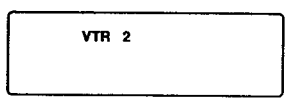


Setting the Command Mode

You can control other Sony video equipment using this Remote Commander by setting the Command Mode to the same position. You can select three different settings for Command Mode.
When you insert the batteries, however, into the Remote Commander, the indication "VTR 2" appears in the display of the Remote Commander. That tells you that the command mode setting of the Remote Commander is set to "VTR 2".

1 Set the COMMAND MODE VTR 1/2/3 selector on the front panel of the VCR to VTR 2.

2 Press COMMAND MODE on the Remote Commander several times until the command mode display "VTR 2" is shown in the display window of the Remote Commander.



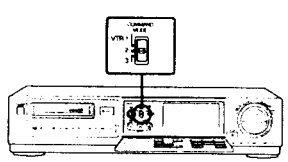
Controlling Other Sony Video Equipment

1 Press COMMAND MODE on the Remote Commander to set the command mode to VTR 1, VTR 3 or whichever it wasn't selected for this VCR.

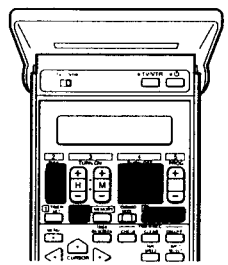
2 Set the COMMAND MODE selector of any other video equipment to the same setting you selected in step 1.

If other Sony video equipment does not have a COMMAND MODE selector, you can control such equipment using the following settings:

Infrared remote controlled Sony Betamax VCRs: VTR 1
(Some of them may not be controlled at this setting.)
Sony 8mm format VCRs: VTR 2
Sony VHS format VCRs: VTR 3



Setting the Time and Date



Before you can do timer recording, you first need to set the clock in the VCR. Once you've set it, you don't need to set it again unless the power has been interrupted for more than one hour.
You can set the time and date between years 1993 and 2008.

Before you begin

- Use the + side of the clock set buttons to increase the digits.
- Use the – side of the clock set buttons to decrease the digits.
- You do not have to set the day of the week. The day of the week is automatically set after the date is set.

If "– : – –" lights up in the display window of the VCR

If the power is interrupted for more than one hour, "– : – –" lights up in the display when the power is restored. You will have to reset the date and time again.

When a short beep sounds repeatedly

Transmission has failed. Check to see if the VCR is being used for timer-activated recording or quick-timer recording. Also check whether the VCR is in standby mode for timer-activated recording. In these cases, you cannot set the clock.

When the time and date are displayed

The clock keeps running as long as no changes are made. The seconds are not reset to 00 when you return to the original screen.

About the setting year of the VCR and of the Remote Commander

You can set the time and date between 0:00 1st January, 1993 and 23:59 31st December, 2092 on the Remote Commander.
However, on the VCR the time and date between 0:00 1st January, 1993 and 23:59 31st, December, 2008 is acceptable.
Accordingly, if you transmit the clock set data beyond 23:59, 31st, December, 2008 to the VCR, a short beep sounds repeatedly and the message "PLEASE TRANSMIT THE DATA TO THE VCR" appears on the TV screen.

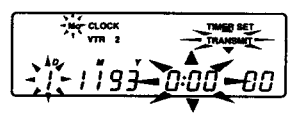
Example of Time and Date Setting

Example: Set to 9:30, November 27, 1993

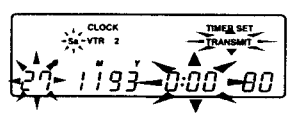
1 Lift the flap on the Remote Commander.

2 Press CLOCK SET (SET/START).

3 Press D (DAY) until "M11 Y93" appears.
The days advance slowly up to 30 or 31 and then the month advances.
When the number of the desired month appears, release your finger from the button.

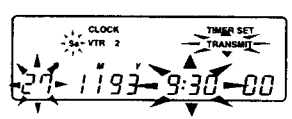


4 Press D (DAY) until "27D" appears.
The days of the week is set automatically.



5 Press the H (hour) and M (minute) buttons under the STOP section to set 9:30.

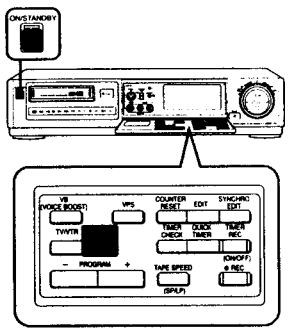
6 Point the Remote Commander at the VCR and press TRANSMIT.
When the date and time are transmitted to the VCR successfully, a beep sounds and the clock starts working.



7 Press CLOCK SET again to release the clock setting mode.

8 Check the display window on the VCR and close the cover.

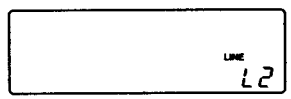
Tuning the VCR to Your TV



This adjustment is only required if you have connected your VCR and TV using only the aerial sockets (see Hookup 1 on page 10).

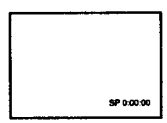
1 Press ON/STANDBY on the front of the VCR so that the lamp above the button lights up from red to green.

2 Press INPUT SELECT on the inside surface of the drop-down panel of the VCR. Each time you press this, part of the display on the VCR will change. Keep pressing until "LINE L2" shows.
Make sure that no equipment is connected to the LINE IN 2 VIDEO jack.

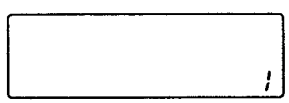


3 Turn on your TV and select a programme position that is not used to receive a TV station.

4 Tune the TV so that a blue screen with tape counter (0:00:00) is clearly displayed on the TV screen. (If you have difficulty, refer to the instructions for tuning your TV.)

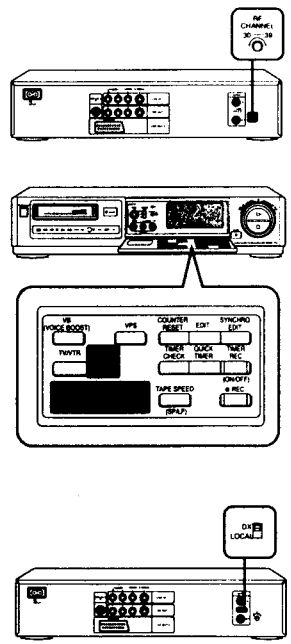


5 Press INPUT SELECT again, and keep pressing it until a programme position shows in the display window of the VCR.



6 Press PROGRAM +/– on the VCR and check that the screen changes to a different programme.

You have now tuned your TV to the VCR. Whenever you wish to receive the VCR's playback picture on the TV, turn to the TV programme position you have set for the VCR and switch on the VCR.



If You Have Failed in Tuning the VCR to Your TV

1 Find a UHF channel between 30 and 39 where there is no picture and you can hear a steady rustling sound or no sound at all.

2 Press INPUT SELECT several times until "LINE L2" appears in the display window of the VCR.

3 With the supplied plastic adjuster, turn the RF CHANNEL screw (at the rear of the VCR) to a channel where your TV clearly displays a blue screen with the tape counter.

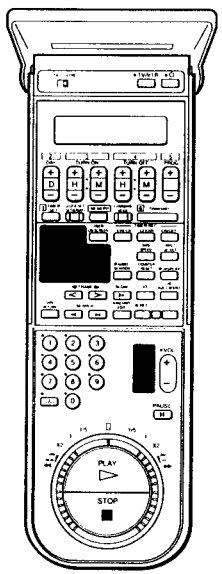
4 Press INPUT SELECT several times until a programme position appears in the display window of the VCR.

5 Press PROGRAM +/– to see if the TV screen changes to a different channel.

If the TV Signal is too Strong

You can strengthen or attenuate the reception signals using the DX/LOCAL switch at the rear of the VCR.
Normally set this switch to the DX position. If the reception signals are very strong, set it to the LOCAL position.

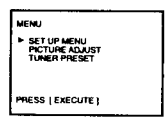
Tuning the VCR to the Required Stations



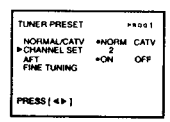
Before you begin

- Your VCR is capable of receiving the following channels.
  VHF channels E2 — E4, E5 — E12, UHF channels E21 — E69, and cable TV channels S01 — S05, S1 — S20 and S21 — S41
- The receivable channels are governed by the TV broadcasting system in your area.
- Up to 60 channels can be allocated to any desired programme position.

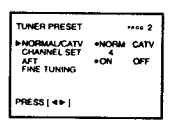
1 Lift the flap on the Remote Commander, point the Remote Commander at the VCR and press MENU. The following menu comes up.



2 Using ▲ or ▼ of the CURSOR keys on the Remote Commander, move the cursor (▶) on the TV screen down to "TUNER PRESET", and then press EXECUTE on the Remote Commander. The menu shown at the right will appear on the TV screen.



3 Using ▲ or ▼ of the CURSOR keys on the Remote Commander, move the cursor (▶) on the TV screen up to "NORMAL/CATV." Then, move the dot to NORM using the left cursor key (◀).



4 Using ▲ or ▼ of the CURSOR keys on the Remote Commander, move the cursor (▶) on the TV screen down to "CHANNEL SET."

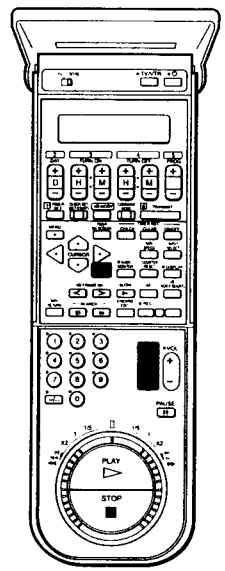
5 Press PROG +/– on the Remote Commander or PROGRAM +/– on the inside surface of the drop-down panel of the VCR to select the programme position.
The programme number will change in the display window of the VCR and on the TV screen.

6 Once you have selected the programme position, tune to the channel required using ◀ and ▶ of the CURSOR keys on the Remote Commander.
The channel number automatically increases with ▶ and decreases with ◀.
The number stops changing when the first broadcast programme received is displayed; the programme will be displayed briefly before the screen turns blue again.

Channels scanning on your VCR

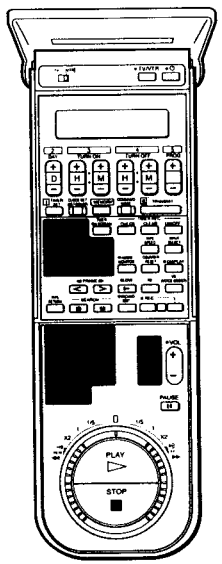
When ▶ is pressed, the channels are scanned in the following order.
When ◀ is pressed, the scanning order is reversed.
VHF (E2-E12) ‣ UHF (E21-E69) ‣ CATV (S1-S20) ‣ HYPER BAND (S21-S41) ‣CATV (S01-S05)

(Continued)



7 If this is the broadcast programme required, press PROG+ once (on the Remote Commander) to automatically store it. To store the next broadcast channel, return to step 5.

8 Having stored all the broadcast channels against your chosen programme numbers, press EXECUTE.



Allocating the Channels Directly

Enter the desired programme numbers using the programme position number buttons. To enter one's digits, press 0 and then the desired number. To enter two digits numbers, press the -/-- (10's digit) button, then press the ten's digit number and the one's digit number.

Disabling Unwanted Channels

If you want to let only desired programme positions appear when you select the programme position for normal recording, quick timer recording or timer-activated recording, you can do this by following the procedure below.

1 Press MENU, move the cursor (▶) down to "TUNER PRESET" and press EXECUTE.

2 Press PROG +/– on the Remote Commander or PROGRAM +/– on the inside surface of the drop-down panel of the VCR until the programme position you want to disable appears in the PROG field of the TUNER PRESET menu.

3 Press programme position number button 0 twice or keep pressing the left and right cursor keys (◀ and ▶) until "0" is displayed in the CHANNEL SET field.

4 Repeat steps 2 and 3 to disable other programme positions.

5 Press EXECUTE.

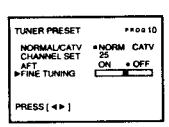
If You Can't Get a Clearer Picture
–Fine -Tuning

Normally, the Auto Fine Tuning (AFT) setting on the TUNER PRESET menu is set to ON, and the AFT function fine-tunes the picture. If the picture of a programme is not acceptable, fine-tune it manually.

1 Select the programme position in which the picture is distorted using PROG +/– on the Remote Commander or PROGRAM +/– on the inside surface of the drop-down panel of the VCR.

2 Press MENU, move the cursor (▶) down to "TUNER PRESET" and press EXECUTE.

3 Press ▲ or ▼ of the CURSOR keys to move the cursor (▶) down to FINE TUNING.
The FINE TUNING indicator is displayed in the TUNER PRESET menu.

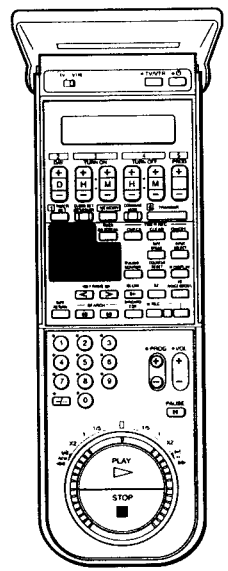


4 Press ◀ or ▶ of the CURSOR keys to get a clearer picture.
The AFT function switches off automatically.

5 If you can't get a better picture, press ▲ to move the cursor (▶) up to "AFT," select "ON" and press EXECUTE.
The TV screen returns to the original screen.

On FINE TUNING indicator
This indicator shows the operable fine-tuning range and stops at the optimal point of reception. When the VCR's tuner is receiving an optimal broadcast signal, the indicator stops at the centre position or one space right or left of the centre position. However, even when a broadcast is received in an optimal condition, the indicator may not be at the position described.

Using the SET UP MENU

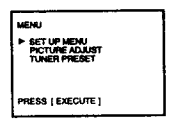


Before using the VCR, set your preferences in the SET UP MENU display .

Before you begin

- Use ▲ or ▼ to move the cursor (▶).
- Use ◀ or ▶ to select the items.
- To quit settings in the middle of the procedure, press MENU.

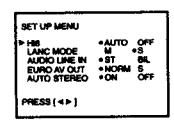
1 Press MENU.
The main MENU appears.



2 Press ▲ or ▼ to move the cursor (▶) to SET UP MENU.

3 Press EXECUTE.
The SET UP MENU appears.

4 Press ▲ or ▼ to move the cursor (▶) to the desired menu choice you want. (See "Menu Choices" below.)
Next, press ◀ or ▶ to move the dot (•) to select the desired mode setting.



5 Press EXECUTE to return to the original screen.
The settings will remain unless the power plug is disconnected.

Menu Choices

Hi8
You can record a cassette in either Hi8 video system or 8mm standard video system.
You cannot perform Hi8 recording with a cassette other than a Hi8 video tape. (See "Hi8 (High Eight) Video System" on page 55.)
When the Hi8 lamp lights up on the front panel of the VCR, you can record in the Hi8 video system.
AUTO --- The VCR automatically detects the type of the cassette to be used (Hi8 video tape or standard video tape) and recording is done accordingly (in the Hi8 video system or 8mm standard video system).
OFF --- When you intend to play back the Hi8 cassette on a standard 8mm video recorder, use this option. Recording is done in the 8mm standard video system.
During playback, the VCR detects if a video tape is recorded in the 8mm standard video system or the Hi8 video system, and the tape is played back accordingly.

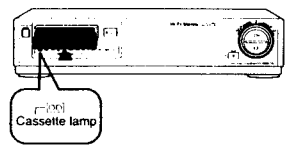
LANC MODE
If you want to control another VCR with the SYNCHRO EDIT button, set to M. Set to S in any other case. (For details, see page 53.)

AUDIO LINE IN
Select ST to record stereo programme sources from the AUDIO LINE IN jacks.
Select BIL to record bilingual programme sources from the AUDIO LINE IN jacks.

EURO AV OUT
Select NORM when you have hooked up connection 2D on page 12 and you want to output the video signal as a luminance/chrominance mixed signal (composite signal) via the 21-pin EURO-AV connector.
Select S when you have hooked up connection 2D on page 12 and you want to output the video signal as a luminance/chrominance separated signal (Y/C separate signal) via the 21-pin EURO-AV connector.

AUTO STEREO
Normally set to ON to receive and record the stereo/bilingual broadcast programmes automatically.
Select OFF if there is too much interference in the stereo sound. The broadcast will be received in monaural.

Playback



This section shows you how to perform the basic playback, handle the video tape, use the display etc.

Inserting a Video Cassette

1 Insert a video cassette.

2 Gently press the centre of the front side of the cassette until the mechanism draws it into the compartment.
When the cassette has been loaded, the cassette lamp lights up on the front of the VCR and the VCR turns on automatically.

Ejecting the Cassette

Press ⏏ EJECT on the VCR. You can eject the cassette when the power is off.
When you press ⏏ EJECT, the power is turned on. After ejecting the cassette, the power automatically shuts off.
You cannot eject a cassette during recording, recording pause mode or timer standby mode.

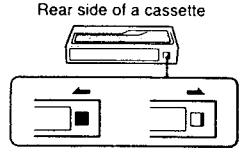
Handling the Cassette

Notes
- Always insert the cassette in the correct position.
- Never insert anything in the small holes on the rear of the cassette.
- Store cassettes in their cases and keep them in an upright position to prevent intrusion of dust and uneven winding.
- To record from the beginning of the tape, play the tape for about 15 seconds at the beginning of a cassette before recording.
- When the VCR is not in use, remove the cassette.
- Attach the cassette label in the designated area.
- Attach the label so that it does not peel off.

Maximum recording time of a cassette

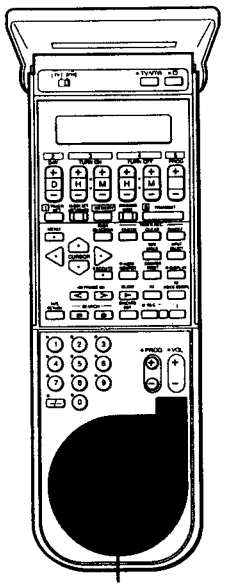
Cassette used	Recording/playback time	
	SP mode	LP mode
E5/P5-30	30min	1h
E5/P5-60	1h	2h
E5/P5-90	1h 30min	3h
P5-110	1h 50min	3h 40min
E5-120	2h	4h

Rear side of a cassette



Protecting your cassette against accidental erasure
To prevent accidental erasure, slide out the tab on the cassette so that the red color is visible.

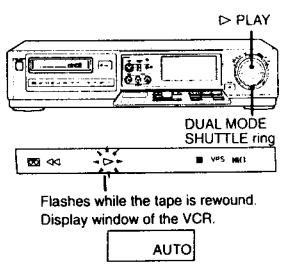
To re-record on the cassette, slide the tab back.



DUAL MODE SHUTTLE ring

Never unplug the power cord during tape transportation

This may cause the tape to be jammed in the VCR. When you need to unplug the power cord, be sure to remove the cassette or turn off the power of the VCR.



Playing Back a Cassette

The VCR automatically detects the type of video system in which the tape was recorded (Hi8 or standard video system, for details see page 20) and plays back the tape accordingly. When a tape recorded in the Hi8 video system is played back, the Hi8 lamp on the front of the VCR lights up.

1 Insert a cassette.
The VCR turns on automatically.

2 Turn on the TV.
If you have made a VCR-TV connection using the LINE OUT 1 (AUDIO/VIDEO jacks and/or S VIDEO connector), select the input for the VCR. (For the VCR-TV connection, see page 11.)
If you have a VCR-TV connection using the LINE OUT 2 (EURO-AV connection), the TV will be set to the input for the VCR automatically. (For the VCR-TV connection, see page 12.)
If you have made an aerial connection, turn the TV to the programme position for the VCR you set for the VCR in "Tuning the VCR to your TV" on page 15.

3 Press ▷ PLAY.

To stop playback
Press ■ STOP.

To stop playback for a moment.
Press II PAUSE.
Press II PAUSE again or press ▷ PLAY to resume playback.

To advance the tape rapidly
Press ■ STOP, then turn the DUAL MODE SHUTTLE ring clockwise.

To rewind the tape.
Press ■ STOP, then turn the DUAL MODE SHUTTLE ring counterclockwise.

To view the picture during fast forward mode or rewind mode
You can view the picture momentarily while the VCR is in the fast forward or rewind mode. Turn the DUAL MODE SHUTTLE ring clockwise during fast-forward, and counterclockwise during rewind.

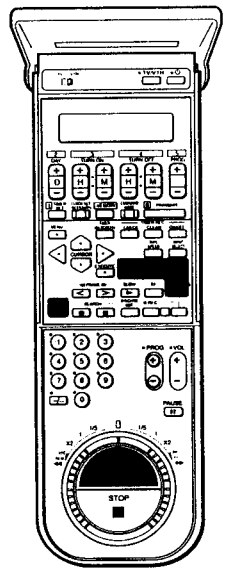
To start playback automatically after rewinding a cassette (Auto play)
This operation works only on the VCR. Press ▷ PLAY while you turn the DUAL MODE SHUTTLE ring counterclockwise fully.
Playback starts automatically after the tape is rewound to the beginning of the tape.
The "▷" indication flashes while the tape is being rewound.

To eject the cassette
Press ⏏ EJECT on the VCR.

Pressing ⏏ EJECT when the VCR is turned off will turn the unit on, eject the cassette and then turn it off again.

When the tape reaches the end during playback
The VCR automatically rewinds the tape to the beginning and the power stays on.

To turn the VCR on or off
Press ON/STANDBY on the VCR or ⏻ on the Remote Commander.



When connection is made to a TV without video/audio inputs
To monitor the playback sound in stereo, make connection to a stereo system.

Notes on counter reading

- The counter does not work on the video tape portions on which no recording has been made.
- After a cassette is ejected, the counter reading is retained. When a cassette is inserted in the VCR, the counter reading automatically returns to "0H00M00S".
- The linear time counter installed in this VCR is not a clock. There is a difference between the actual recording and playback time, and the counter display. This difference may increase when switching the tape speed from SP to LP and vice versa, or depending on the portion of the transported tape.

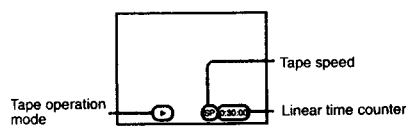
Selecting the Playback Sound of a Stereo/Bilingual Tape

Choose the desired sound to be played back with AUDIO MONITOR on the Remote Commander.

Type of cassette	AUDIO MONITOR button and indicator	Type of cassette	AUDIO MONITOR button and indicator
Stereo	Each press changes the playback sound to: STEREO (stereo sound) ↓ L (Left channel) ↓ R (Right channel)	Bilingual	Each press changes the playback sound to: MAIN (main sound) ↓ SUB (sub sound) ↓ MAIN/SUB (main/left channel and sub/right channel)

Information on the Screen

To turn off or call up the information on the TV screen, press DISPLAY on the Remote Commander.



Indexing Tape Contents

Before recording or playback, press COUNTER RESET to reset the counter to zero. The counter installed in the VCR is called a "linear time counter", which tells you how much the tape has run in terms of time. By noting the setting, you can find that point later by referring to the counter. Use the label on a cassette to list the programmes and their counter readings.

Locating a Particular Scene Later

If you want to return to a particular scene later, press COUNTER RESET at the desired scene so that the linear time counter is set to "0H00M00S".

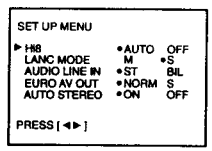
To return to the desired scene
Press TAPE RETURN on the Remote Commander while the VCR is in stop mode. The tape rewinds to the position where the counter reads "0H00M00S", and stops.
To start playback of the scene
Press ▷ PLAY.

Listening More Easily to Conversation Recorded with a Camcorder

When you press VB (VOICE BOOST) while playing back a tape recorded with a camcorder, human voice portion of the sound will be enhanced so that it is easier to listen to conversation. This reduces the sound of wind and other "unwanted" background noise.

Recording

You can record in the Hi8 video system or the standard 8mm video system. The VCR detects the type of video tape (Hi8 or standard 8mm) on which you want to record, and records accordingly.
Normally you should set the Hi8 setting to AUTO in the SET UP MENU. However, if you intend to play back on another standard 8mm video recorder, set the Hi8 setting to OFF in the SET UP MENU (for details, see "Using the SET UP MENU" on page 20).



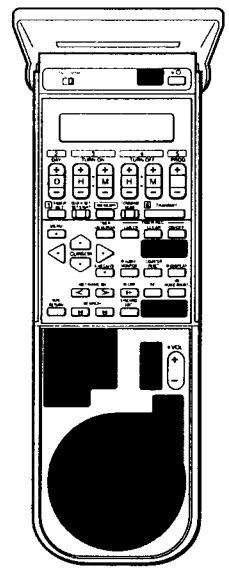
Type of video tape and video system in which a tape will be recorded

Video tape used	Hi8 setting in the SET UP MENU	Video system tape will be recorded in
Hi8 video tape	AUTO	Hi8 video system
	OFF	Standard 8mm system
Standard 8mm video tape	AUTO	Standard 8mm system
	OFF	Standard 8mm system

Before you begin

Before you begin, check the following points:

- Make sure that the connections have been made correctly (see pages 10 – 12).
- Check the input mode indicator in the display window of the VCR.



Recording TV Programmes

1 Insert a cassette.
The VCR turns on automatically (Auto power on).

2 Turn on the TV.

3 If you have made a VCR-TV connection using the LINE OUT 1 (AUDIO/VIDEO jacks and/or S VIDEO connector), select the input for the VCR. (For the VCR-TV connection, see page 11.)
If you have a VCR-TV connection using the LINE OUT 2 (EURO-AV connection), press TV/VTR so that "VTR" appears in the display window of the VCR.
If you have only made an aerial connection, turn the TV to the programme position for the VCR you set for the VCR in "Tuning the VCR to your TV" on page 15.

4 Press INPUT SELECT to light the programme position in the display window of the VCR. Select the programme position to be recorded with PROG +/– or the programme position number buttons.
When using the programme position number buttons, press 0 and then the desired number to enter one digits position number. To enter two digits numbers, press the –/– – (10s digit) button, then press the ten's digit number and one's digit number.

5 Select SP or LP using TAPE SPEED.
To select the best recording tape speed, see "Maximum recording time of a cassette" on page 22.

6 Press the two ● REC buttons on the Remote Commander at the same time, or the ● REC button on the VCR.
The REC (recording) lamp lights up on the front of the VCR.

To stop recording
Press ■ STOP.

To pause recording
Press ❚❚ PAUSE. To resume recording, press ❚❚ PAUSE. If the recording pause exceeds approximately 7 minutes, the VCR stops.

Pausing

Technique 1
You can stop recording an unwanted scene and resume recording smoothly.

1 Press ❚❚ PAUSE when an unwanted scene appears.
Recording will stop and the VCR enters recording pause mode.

2 Press ❚❚ PAUSE at the desired point to release pause mode.
Recording resumes from the point set in step 1.

Technique 2
When an unwanted scene has already started recording, you can rewind the cassette to the desired point, have the VCR standby in recording pause mode, and resume recording at the desired scene. This operation is only available on the VCR.

1 Press ❚❚ PAUSE to set the VCR to recording pause mode.

2 Turn the DUAL MODE SHUTTLE ring on the VCR counterclockwise to search for the point from which you wish to continue recording.

3 Release the DUAL MODE SHUTTLE ring on the VCR at the desired point.
After an instant in still mode, the VCR automatically enters recording pause mode.

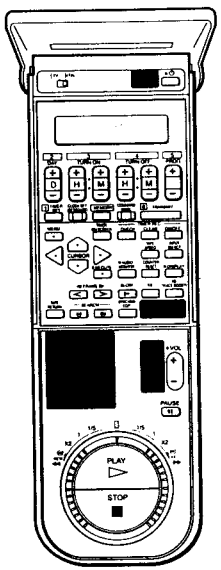
4 Press ❚❚ PAUSE.
Recording resumes.

When the cassette reaches the end

The cassette rewinds to the beginning and the power stays on.

If the tape is ejected when the ● REC button is pressed

The tab on the cassette is slid out. Slide the tab in or use a new cassette. (See page 22)



Recording with the TV Off

Turn off the power to the TV or monitor.
There will be no interference with the recording.

Watching One TV Programme While Recording Another

The recording procedure differs depending on the type of TV-VCR connection you have made.

1 Record the programme following the steps 1 to 6 on page 26.

2 Do one of the following depending on the type of connection your VCR has:

If you have made a LINE OUT 2 EURO-AV connection:

1 Press TV/VTR until "VTR" disappears from the display window of the VCR.

2 Select the programme you want to watch on the TV.

If you have made an aerial connection only:

Select the programme you want to watch on the TV.

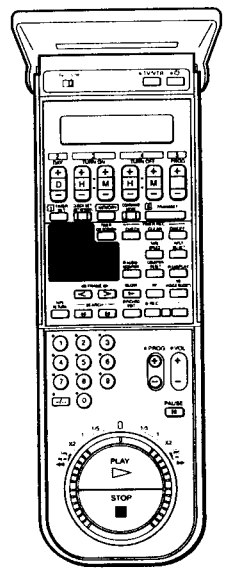
If you have made a LINE OUT 1 VIDEO/AUDIO connection:

1 Select the tuner input on the TV.

2 Select the programme you want to watch on the TV.

Note on stereo broadcasts

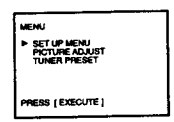
If you have only made an aerial connection, you cannot hear the programme in stereo.



Selecting the Audio Input from the External Source

You must select the sound you want to record when you want to record a stereo or bilingual pre-recorded programme from other equipment such as a VHS-format VCR, which is connected to the LINE IN 1 on the rear of the VCR or the LINE IN 2 on the front of the VCR.

1 Press MENU to call up the SET UP MENU.

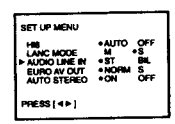


2 Choose a AUDIO LINE IN option.

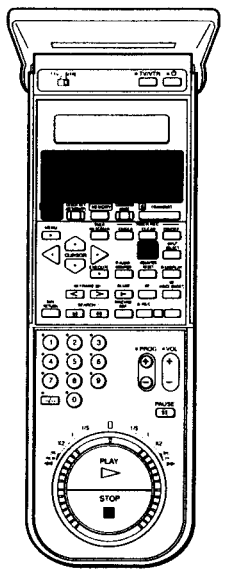
ST: to record stereo programme sources

BIL: to record bilingual programme sources

3 Press EXECUTE to return to the original screen.



Timer-Activated Recording



The timer recording function lets you preset your VCR to record up to six programmes within a one-month period. Perform this procedure on the Remote Commander and transmit the preset data to the VCR.

Before you begin

- Make sure that the time and date are set correctly (see "Setting the Time and Date" on page 14.)
- Check to see that the cassette is long enough to record all the programmes.
- Make sure that the safety tab of the cassette has not been slid out. If you insert a cassette with the red safety tab visible (closed) and try to set the timer, the cassette automatically ejects from the VCR.

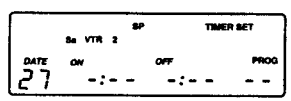
Setting the Timer

Example
Here is how to record a broadcast on programme position 8 from 20:00 to 20:50 on Saturday, 27th November 1993, in SP mode.

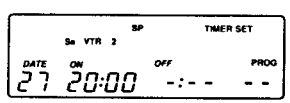
1 Lift the flap on the Remote Commander.

2 Press TIMER SET to enter timer preset mode.

3 Press D (DAY) until 27 appears.
The day of the week (Saturday) is automatically set.

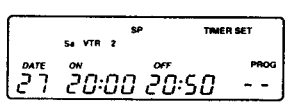


4 Press H under the TURN ON section until 20 appears.

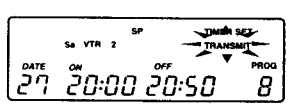


5 Press M under the TURN ON section until 00 appears.

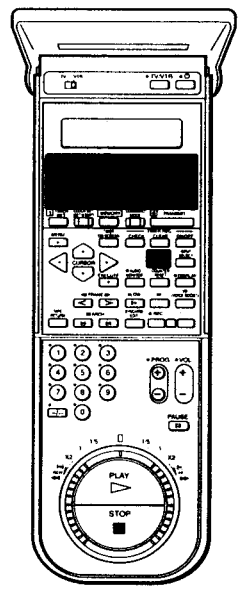
6 Press H and M under the TURN OFF section until 20:50 appears.



7 Press PROG+/– until 8 appears.
The TRANSMIT indicator flashes to tell you that all of the items have entered.

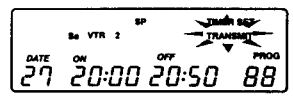


You can use the following buttons during timer recording
- TIMER REC (ON/OFF) to stop recording
- COUNTER RESET (See page 24)
- TV/VTR (See page 23)
- TIMER CHECK (See page 33)
- DISPLAY (See page 24)
- TIMER ON SCREEN (See page 32)



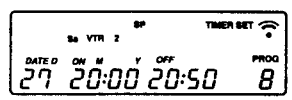
If power interruption occurs during timer recording
Recording will stop and your VCR will turn off. If power is restored within one hour, and it's before the recording end time, recording will start again from that point. If the interruption lasts for more than one hour, any presettings will be erased and you'll need to reset the time and date for your programmes. Note that the tape counter will return to "0H00M00S."

8 Set the recording speed, SP or LP, with TAPE SPEED (SP/LP).



9 Point the Remote Commander to the VCR and press TRANSMIT. Press TRANSMIT within five minutes after you have entered all the items.
A beep sound will tell you that the preset data have been transmitted to the VCR, and the VCR enters recording standby mode.
The TIMER lamp lights up on the front of the VCR.
The PROGRAM LIST appears on the TV screen for a few seconds if the VCR is turned on.

10 Press TIMER SET to release the timer programming mode and close the flap.



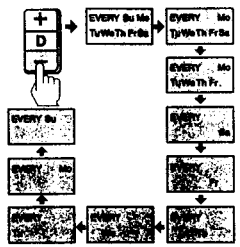
To set another programme, repeat steps 2 to 9.

11 Close the flap of the Remote Commander so that the present time appears on the display of the Remote Commander.
The VCR turns on automatically and starts recording at the preset time, then turns off after recording ends.

To stop timer-recording
To stop timer-recording while a programme is being recorded, press TIMER REC (ON/OFF).

To record video sources from the LINE IN 1 or LINE IN 2
Press INPUT SELECT any time in steps 1 to 8 to change the indication from PROG-- to LINE L1 (for the LINE IN 1 AUDIO/VIDEO jacks and S VIDEO connector) or LINE L2 (for the LINE IN 2 AUDIO/VIDEO and S VIDEO connector).

Daily/Weekly Recording

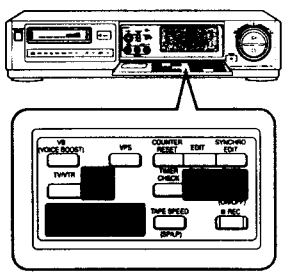


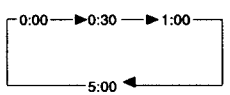
You can preset your VCR for daily or weekly recording.

Daily recording records the same programme every day of the week, while weekly recording records the same programme on the same day, every week.

In step 2 of the "Setting the Timer" section (page 29), press the –(minus)-side of the D button to change the indication in the display window of the Remote Commander to one of the choices. (See the diagram at left.) When you set and transmit your preset data to the VCR, the corresponding indicator lights up in the VCR display window of the VCR.

Quick-Timer Recording





This function is convenient for recording programmes without going through the entire timer setting procedure. Note, however, that it provides only an approximate setting for the programme you wish to record.
If you're currently recording, skip to step 7.

Before you begin

- Make sure that the clock has been set correctly.
- Make sure the TIMER lamp is not lit on the front of the VCR.

1 Insert a cassette into your VCR.

2 Press INPUT SELECT to select the recording source from the tuner input or line input. If you selected the tuner input, the programme position lights in the display window of the VCR. If you selected the line input, the LINE indicator lights in the display window of the VCR.

3 Select the desired recording speed (SP or LP) by pressing TAPE SPEED on the inside surface of the drop-down panel.

4 Press QUICK TIMER on the VCR.
If you insert a cassette with the safety tab slid out, your VCR will eject the cassette.

5 Select the programme position you wish to record using PROGRAM +/– on the inside surface of the drop-down panel of the VCR if you select the tuner input. The programme position can be changed while the programme position indicator is flashing (for about 30 seconds).

6 Press QUICK TIMER again to start recording.
Unless you press QUICK TIMER within 30 seconds, the power will be turned off.

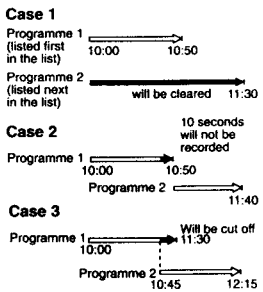
7 Select the recording duration by pressing QUICK TIMER to change the duration indicator in the display window of the VCR.
Each time you press QUICK TIMER, the recording duration increases by 30 minutes (up to 5 hours).
Once recording has finished, your VCR will turn off automatically.
During quick-timer recording, the recording time can be changed by pressing the QUICK TIMER button. During recording, the time displayed will count down to zero in units of one minute.

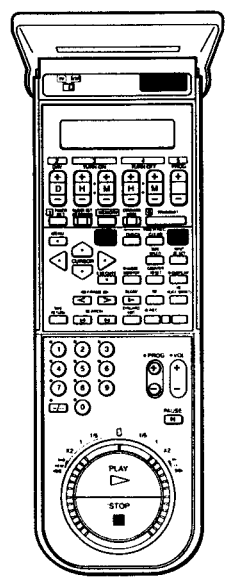
To stop quick-timer recording
To stop quick-timer recording while a programme is being recorded, press TIMER REC (ON/OFF).

If your cassette ends during quick-timer recording
Recording stops and the VCR turns off. The cassette will not rewind automatically.

If a power interruption occurs during quick-timer recording
Recording will stop and the VCR will turn off. If the interruption lasts less than one hour and the power is restored before the recording end time, recording will start again from the time the power is restored.

For the buttons you can use during quick-timer recording
See page 29.





Notes
- If you set a programme to record only one time, that setting is erased from the PROGRAM LIST display when the recording has finished.
- To check the timer settings during timer recording, press TIMER ON SCREEN.

Overlapping Timer Recordings

If you have made a "mistake" when presetting multiple programmes, the VCR will interpret your settings as described in the following cases.

Case 1: If you preset two programmes to record at the same time...

The programme listed first on the PROGRAM LIST display has priority over the other programmes. The timer settings for lower priority programmes will be deleted from the PROGRAM LIST display when recording begins for the first programme.

Case 2: If you set programme 2 to record at the same time you set programme 1 to finish recording...

The last 10 seconds of programme 1 will not be recorded.

Case 3: If you set programme 2 to record before programme 1has finished recording...

Programme 2 will begin recording before programme 1 has finished.

Checking the Timer Settings

Here's how to display your timer settings to confirm the programmes you wish to record.

1 Press TIMER REC (ON/OFF) to release timer recording standby mode.
The TIMER lamp turns off on the front of the VCR.

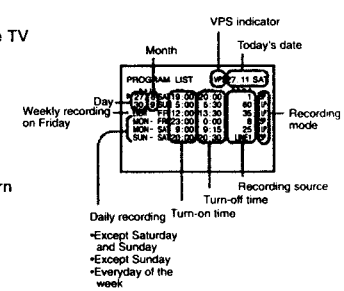
2 Press ⏻ to turn on the VCR.

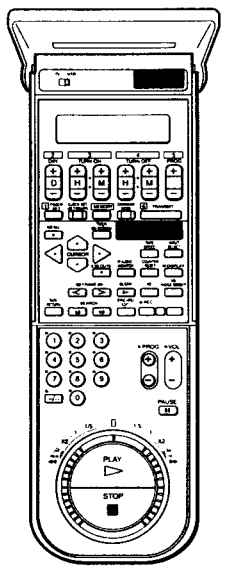
3 Turn on the TV.
If you have made a VCR-TV connection using the LINE OUT 1 (AUDIO/VIDEO jack and/or S VIDEO connector), select the input for the VCR. (For the VCR-TV connection, see page 11.)
If you have a VCR-TV connection using the LINE OUT 2 (EURO-AV connection), press TV/VTR so that "VTR" appears in the display window of the VCR.
If you have made only an aerial connection, turn to the video channel you set the VCR to in "Tuning the VCR to Your TV" on page 15.

4 Press TIMER ON SCREEN.
The PROGRAM LIST appears on the TV screen for you to check.

5 After you have checked the settings, press TIMER ON SCREEN again.
The original TV screen appears.

6 Press TIMER REC (ON/OFF) to return to timer recording standby mode.
The TIMER indicator turns on in the VCR display panel.





Changing or Cancelling the Timer Settings

Here's how to change or cancel any timer settings on the PROGRAM LIST display.

1 Display the PROGRAM LIST display on the TV screen.
Follow steps 1 through 4 of the "Checking the Timer Settings" (page 32) section.

2 Press TIMER REC CHECK to display the cursor (▶).

3 Press TIMER REC CHECK to move the cursor (▶) to the setting you want to change or cancel.

4 **To change the setting**
Re-enter all the items and transmit it to the VCR. (See "Setting the Timer" on page 29.)
The VCR returns to timer recording standby.

To cancel the setting
Press TIMER REC CLEAR.

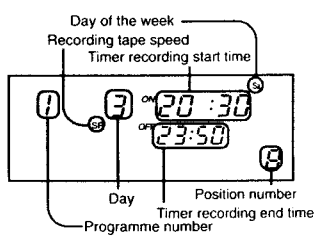
To change or cancel timer settings without using the PROGRAM LIST display

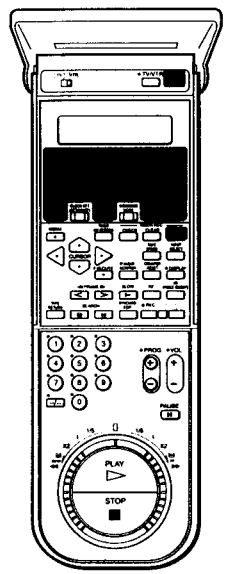
Using this method, you can change or cancel the timer settings without releasing the timer recording standby mode.

1 Press TIMER REC CHECK repeatedly until the programme you want to change or cancel appears in the display window of the VCR.

2 **To change the timer setting,** change the settings and press TRANSMIT to transmit it to the VCR.

To cancel the setting, press TIMER REC (ON/OFF), then press TIMER REC CLEAR.
The timer setting of the selected programme is cancelled.
If there are other programmes to be executed, press TIMER REC (ON/OFF) to put the VCR into the timer recording standby mode.





Using the VCR Before Timer Recording Starts

1 Press TIMER REC (ON/OFF).
The TIMER lamp on the front of the VCR turns off and the VCR leaves the timer recording standby mode.

2 Press ⏻.
The VCR is ready to use.
A short beep sound will be heard and the message will appear on the TV screen five minutes prior to a preset timer start time.

3 After using the VCR, press TIMER REC (ON/OFF).
The VCR returns to the timer recording standby mode.

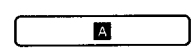
Storing the Timer Settings

Once a one-time programme has been recorded, the setting is cancelled, and if you wish to record at that time again, you need to reenter the settings. Daily / Weekly recordings are of course kept in memory and repeated until you change them. However, if you store the timer settings into the Remote Commander's memory, you can recall the timer settings whenever you want. You can store up to four settings into the Remote Commander's memory. Each setting is stored into one of four positions (A, B,C and D). Moreover, the recording date shifts automatically to the next week after the recording is completed. Thus, you can have easy access to the most frequently used settings, especially your favourite weekly programme.

1 Press TIMER SET to enter timer preset mode.

2 Press MEMORY so that MEMORY A appears in the display window of the Remote Commander.

3 Set all items for timer-activated recording.
(See "Setting the Timer" on pages 29 and 30.)
The setting is stored in MEMORY A.



4 If you want to store other settings, press MEMORY several times until the positions you want to store settings (B, C, or D) appears, then repeat step 3.

Press TIMER SET to show the current date and time in the display window of the Remote Commander.

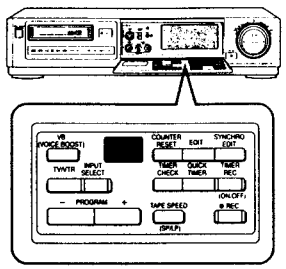
Recalling and re-entering the settings

1 Press TIMER SET to enter timer preset mode.

2 Press MEMORY several times until the indication (A, B, C or D) you want to recall/change appears.

3 Make whatever changes you want.

4 Press TRANSMIT.
The VCR enters timer-activated recording standby mode.



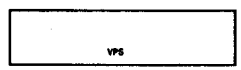
VPS lamp

VPS Recording

The German broadcasting system transmits VPS (Video Programme System) signals with its TV programmes. These signals assure you that your timer recordings are made regardless of broadcast delays, early starts, or broadcast interruptions. For example, if an urgent news bulletin interrupts a regular programme, recording will stop. As soon as the interrupted programme resumes, recording starts again.

1 Make sure the "TIMER" lamp is not lit on the front panel of the VCR.

2 Before setting the timer to record, press VPS on the inside surface of the drop down panel so that the "VPS" indicator lights up in the display window of the VCR or the VPS lamp lights up on the front of the VCR.



3 Set the timer following the steps of "Timer-Activated Recording" (page 29). The VCR will enter standby mode for VPS recording well before the turn-on time so as to be ready if there is a change in the start time.

Notes

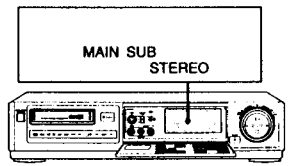
- When the VCR is on standby for VPS programme, programme position numbers set for timer recording appear in the display window sequentially at intervals of several seconds.
- The VCR will be ready for VPS recording well before the turn on time (ON/STANDBY indicator lights in green) and remain on standby until the VPS signal is received so as to be ready for any change in the actual broadcast time.

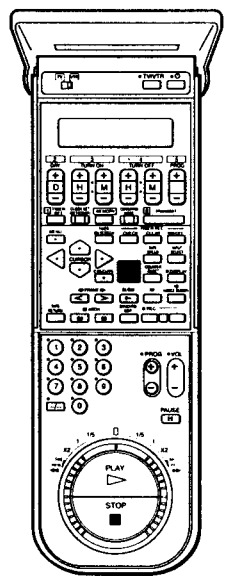
Notes on VPS Recording

- If recording times overlap due to a VPS time shift, the programme that was broadcast first has priority. The second programme will begin to record only when the first programme has finished.
- The VPS button is effective only when TIMER lamp does not light up on the front panel of the VCR or in the display window of the VCR.
- If the VPS cannot receive a VPS signal because the signal is too weak or because the station failed to transmit VPS signals, the VCR will record the programme without the VPS function regardless of the VPS lamp lit on the front of the VCR or of the VPS indicator lit in the display window of the VCR.

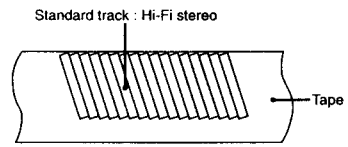
On the VPS lamp and the VPS indicator
These lamp and indicator function the same.

Recording Stereo/Bilingual Programmes





This VCR can receive and record stereo/bilingual programmes based on the "Zweiton" system adopted in Germany. Recording of the Zweiton system programmes is automatically done. A stereo or bilingual programme is recorded as shown below.



Where the sound is recorded

Stereo programme
When a stereo programme is received, "STEREO" appears in the display window of the VCR.

Bilingual programme
When a bilingual programme is received, "MAIN" appears in the display window of the VCR.

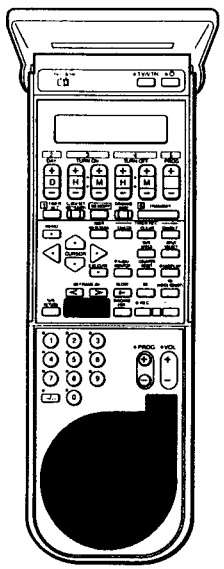
How to select the sound you hear

Stereo programme
The AUDIO MONITOR button does not function when receiving the stereo programmes of the Zweiton system.

Bilingual programme
When the VCR receives a bilingual programme, "MAIN" appears in the display window of the VCR and you can select the sound to hear.
Press AUDIO MONITOR several times until you can hear the sound you want. With each press, the sound is cyclically changed in the following order.

Display	Sound heard
MAIN	Main sound
SUB	Sub sound
MAIN SUB	Main sound on the left channel Sub sound on the right channel

Variable Speed Playback



The following section explains the advanced playback functions available on your VCR. No sound is heard during these operations.

Using the DUAL MODE SHUTTLE ring, you can play a cassette at a variety of forward and reverse speeds. You can also freeze a picture using the pause function.

Still Picture

During playback, press II PAUSE to hold the picture in one place.

To resume normal playback, press either ▷ PLAY or II PAUSE.

If you leave your VCR in pause mode, normal playback resumes after approximately 7 minutes.

Picture Search During Playback

Turn the DUAL MODE SHUTTLE ring clockwise or counterclockwise.
When you release your fingers from the ring, normal playback will resume.

Locked Picture Search

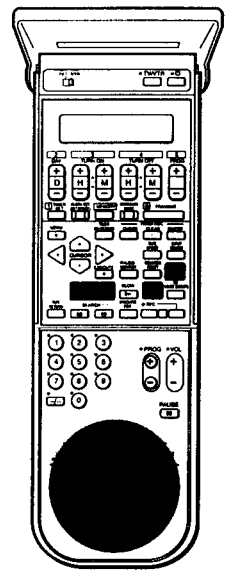
This operation works only on the Remote Commander.

Press SEARCH on the Remote Commander during playback or playback pause. If you press the left SEARCH button, the VCR enters locked picture search mode in the reverse direction. If you press the right SEARCH button, the VCR enters locked picture search mode in the forward direction.

To return to normal playback
Press ▷ PLAY.

Notes:

- If noise appears on top or bottom of the TV screen during still playback, put the VCR in slow motion playback mode and shift noise using the PICTURE ADJUST screen. (For details, see page 39.)
- When viewing the picture in variable speed playback mode, the picture may shake vertically or the colour may become black and white, depending upon the TV you are using.
- During picture search mode, several streaks appear on the TV screen. This is normal.
  A wider streak will appear on the TV screen during picture search mode as compared to tapes recorded in LP mode.
- If you perform picture search with the VCR connected to your TV via AERIAL OUT, a sound such as a buzzing sound may slightly be heard.
- When you perform variable speed playback in the reverse direction, a wider streak appears on the screen, especially in SP mode. This is normal.



Notes:

- Even when noise appears on the TV screen during –x2 (reverse double-speed) playback, it is not necessary to adjust tracking.
  You cannot adjust tracking.
- It takes about two or three seconds to reverse the direction in slow motion mode or frame-by-frame mode.
- When the tape speed is switched, noise appears a moment.
- If a tape has portions recorded in both SP and LP modes, the VCR will automatically adjust; however, the playback speed during reverse/forward slow motion playback, and x2 playback is not changed even though the tape speed is actually switched SP to LP or LP to SP

x2, –x2 Speed Playback

Using the DUAL MODE SHUTTLE ring:
Press DISPLAY so that the information display appears on the TV screen.
Slowly turn the DUAL MODE SHUTTLE ring clockwise (in the forward direction) or counterclockwise (in the reverse direction) during playback or playback pause until the x2 (forward double-speed playback) or –x2 (reverse double-speed playback) display appears on the TV screen.

To return to normal playback or playback pause
Release your fingers from the ring.

Using the x2 button on the Remote Commander:
Press x2 during playback or playback pause.

To play back in the reverse direction
Press < FRAME.

To resume the forward direction
Press FRAME >.

To return to normal playback
Press ▷ PLAY.

–x1 Playback

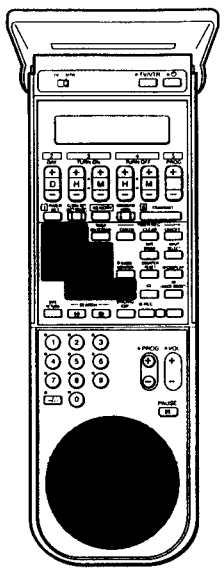
Using the DUAL MODE SHUTTLE ring:
Press DISPLAY so that the information display appears on the TV screen.
Gently turn the DUAL MODE SHUTTLE ring counterclockwise during playback or playback pause until the VCR enters reverse slow motion playback mode. After a slow motion picture appears on the TV screen, you can view a –x1 playback picture. Hold the DUAL MODE SHUTTLE ring at that point.

Using the Remote Commander:
Press ▷ PLAY, then < FRAME.

Frame-by-Frame Picture

This operation works only on the Remote Commander.
During playback pause, press FRAME > to advance the picture one frame or < FRAME to reverse the picture one frame.

Each time you press the button, the picture moves one frame. To resume normal playback, press ▷ PLAY.



Slow Motion Playback

Using the DUAL MODE SHUTTLE ring:
Press DISPLAY so that the information display appears on the TV screen.
Slowly turn the DUAL MODE SHUTTLE ring clockwise (in the forward direction) or counterclockwise (in the reverse direction) during playback or playback pause until the SLOW (forward slow motion playback) or –SLOW (reverse slow motion playback) display appears on the TV screen.

To return to normal playback or playback pause
Release your fingers from the ring.

Using the Remote Commander:
Press ▮► SLOW during playback or playback pause.

To play back in reverse direction
Press < .

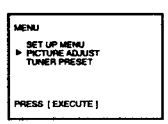
To resume the forward direction
Press > .

To return to normal playback
Press ▷ PLAY.

Adjusting Tracking During Variable Speed Playback

This adjustment works during only slow motion playback and x2 speed playback.

1 Press MENU.
The main MENU appears.



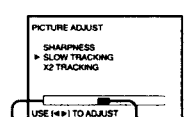
2 Press ▲ or ▼ to move the cursor to PICTURE ADJUST.

3 Press EXECUTE.
The PICTURE ADJUST menu appears.

4 Press ▲ or ▼ to move the cursor (▸) to the item you want.

5 Press ◄ or ► to move the ■ mark on the tracking bar so that you will obtain the best possible picture on the screen.

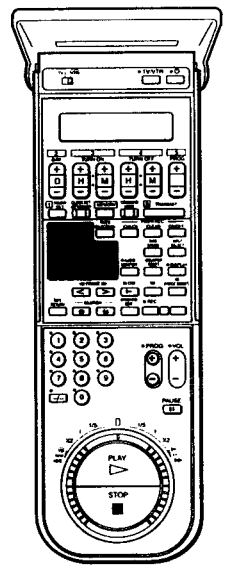
6 Press EXECUTE.
The PICTURE ADJUST menu disappears.



Shift this until you obtain the best possible picture.
Tracking bar

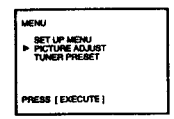
Notes on tracking adjustment

- While playing back in slow motion, the tracking adjustment may not remove all noise from the picture. It is not a mulfunction.
- If the tracking bar is shifted too much, noise in the picture becomes too unstable to adjust. In this case, reset the tracking to the center position.
- If the VCR is in stop mode, the tracking bar will not appear on the TV screen. Since you cannot adjust tracking, put the VCR in slow motion playback mode or x2 speed playback mode to adjust tracking.
- It is necessary to adjust tracking for both the SP and LP modes.



Adjusting the Picture Quality— SHARPNESS

Use the SHARPNESS to enjoy clear playback picture. (These functions have no effect on TV picture.)
This adjustment works during playback.

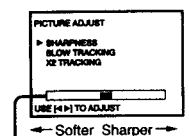


1 Display the PICTURE ADJUST menu.
Follow steps 1 through 3 on page 39.

2 Press ▲ or ▼ to move the cursor (▸) to SHARPNESS.

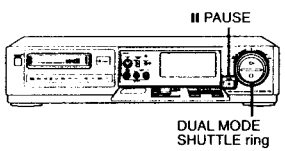
3 Press ◄ or ► to adjust the picture to your preference.

4 Press EXECUTE.
The PICTURE ADJUST menu disappears from the TV screen and original screen returns.



Adjustment bar

Cutting out the Unwanted Scenes — SHUTTLE EDIT



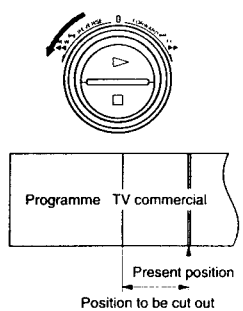
During Recording

This function works only on the unit.

If you want to cut out scenes such as TV commercials, you can pause recording and rewind the tape until the beginning of an unwanted scene is reached. You can then, record over it. This feature is controlled using the DUAL MODE SHUTTLE ring on the VCR. During timer-activated recording, you cannot use this function.

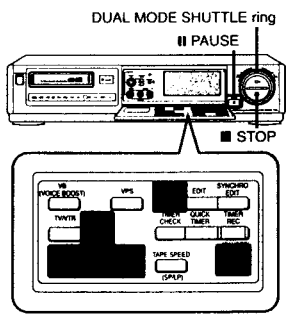
1 Press II PAUSE while recording.
The VCR enters recording pause mode.

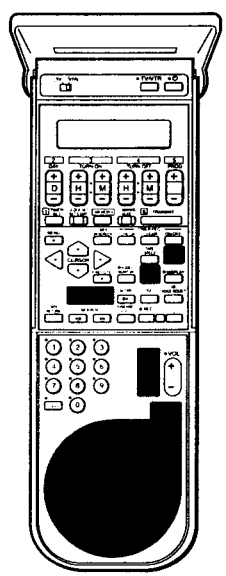
2 Turn the DUAL MODE SHUTTLE ring on the VCR counterclockwise to rewind the tape until the scene you want to start cutting out appears.



Turn the ring slightly. While rewinding, the screen changes to the playback picture, but sound is not switched. When you release the ring, the VCR enters playback pause mode. After 3 seconds, VCR returns to recording pause mode.

3 Press II PAUSE when the scene you want to start cutting in appears on the screen.
Recording starts.





Note:

The picture may be distorted a moment at the cut-out point (recording end point).

During Playback

You can re-record over the unwanted portion of a pre-recorded cassette. Use the DUAL MODE SHUTTLE ring.

1 Press II PAUSE at the end of the unwanted scene during playback.
The VCR enters playback pause mode.

2 Press COUNTER RESET to set the linear counter to "0H00M00S."

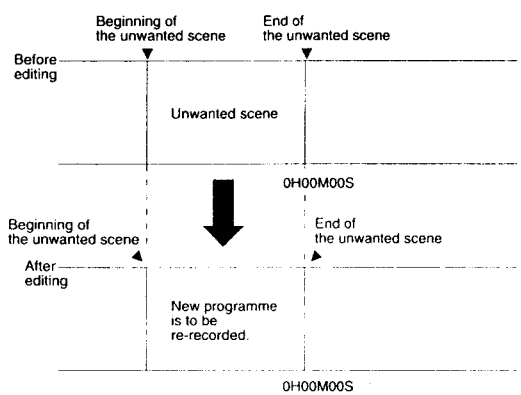
3 Turn the ring until the beginning of the unwanted scene appears on the screen.
When you release the ring, the VCR enters playback pause mode.
Use FRAME < or > to advance or rewind the picture frame by frame to find more specific points.

4 Press ● REC.
The VCR enters recording pause mode.

5 Select a new programme for re-recording.
Select the programme position or change the input by pressing PROGRAM +/– on the inside surface of the VCR or PROG +/– on the Remote Commander or INPUT SELECT.

6 Press II PAUSE when the scene to be recorded appears on the screen.
Recording begins.

7 Press ■ STOP when the linear counter shows "0H00M00S."

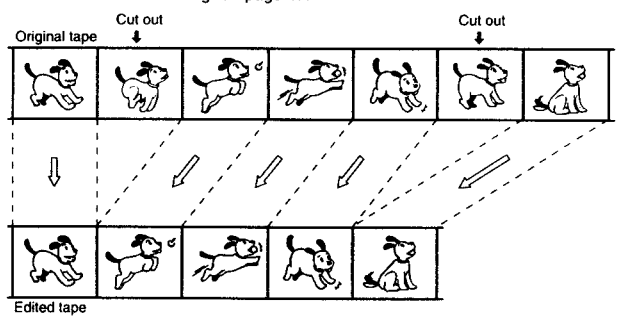


Overview of the Editing Functions

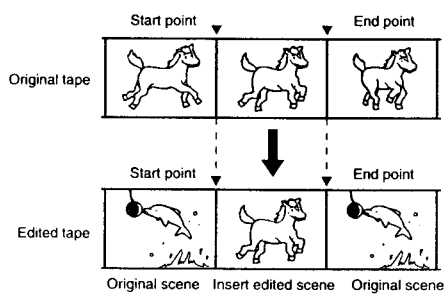
Using an additional VCR, you can record programmes from one VCR to the other. The following are the tape editing functions available on the VCR.

• To make a copy of a tape
—> See "Tape Dubbing" on page 44.

• To edit out unwanted scenes
—> See "Assemble Editing" on page 47.



• To insert another scene into a tape
—> See "Insert Editing" on page 47.



• To edit tapes using the synchronized editing function
—> See "Synchronized Editing" on page 50.

You can also use the synchronized editing function to perform assemble editing and insert editing if your another VCR has a control L connector. Using this function controls both the playback VCR and the recording VCR simultaneously.

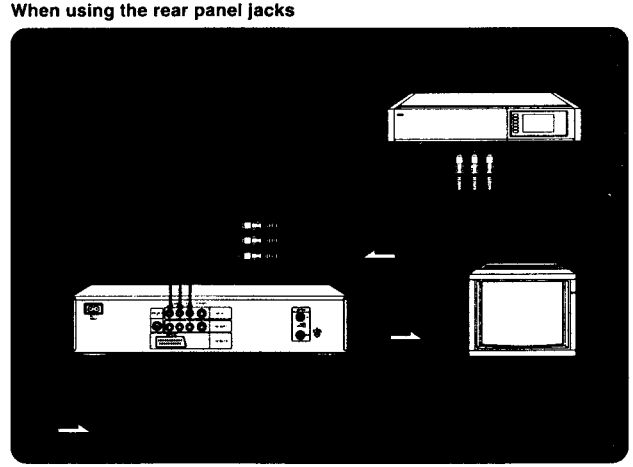
Tape Dubbing

Editing from the Other VCR

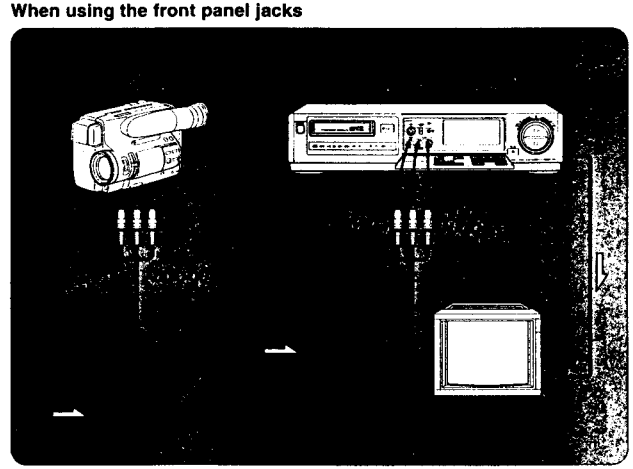
Here's how to edit from the other VCR (such as an 8mm video camera recorder or a VHS-format VCR for playback) when using this VCR for recording.
You can use the jacks located on the front panel or rear panel to perform this operation.

Connections

When using the rear panel jacks

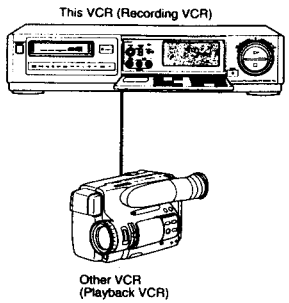


When using the front panel jacks



Notes:

- When the other VCR has a S VIDEO connector, use the S VIDEO conneting cable. This connection gives you a higher quality picture than using the video cable.
- When connecting the VCRs, do not connect both LINE IN and LINE OUT jacks on your VCRs simultaneously. Doing so may cause a humming noise.
- To avoid deterioration of picture quality, remember to switch on the EDIT function of the other VCR if the EDIT function is provided with that VCR.
- If your playback VCR is a monaural unit, connect the white plug to LINE IN 2 AUDIO L on this VCR. This lets you record the sound of the playback VCR on both channels of this VCR. Do not connect the white plug to LINE IN 2 AUDIO R.
- When you use the VIDEO IN jack and S VIDEO IN connector at the same time, the S VIDEO IN connector takes priority.



Before you begin

- Select the tape speed (SP or LP) using TAPE SPEED.
- Press INPUT SELECT to select LINE IN 1 or LINE IN 2.
  (When connected to the rear panel, select LINE IN 1. When connected to the front panel, select LINE IN 2).
  The L1 or L2 indicator appears in the display window of the VCR.
- Press EDIT so that EDIT indicator appears in the display window of this VCR.
  If your playback VCR has also an editing function, select this function to reduce static and improve reception.

Operation

1 Insert a blank cassette into this (recording) VCR.

2 Turn on the other (playback) VCR and insert a source cassette.

3 Locate the playback starting point and select the playback pause mode on the other VCR.

4 Locate the recording starting point and select the recording pause mode on this VCR.

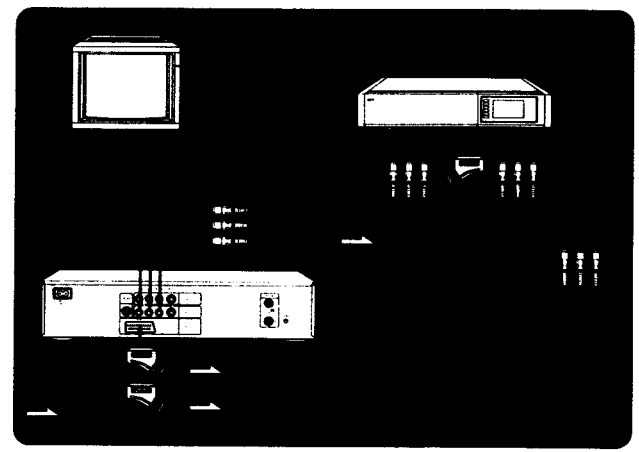
5 Press II PAUSE on both VCRs.
For the best results, press II PAUSE on the other VCR just before pressing II PAUSE on this VCR.
When you've finished editing, press ■ STOP on both VCRs.

Notes:

- If your recording VCR is equipped with the S VIDEO INPUT connector, you can use the supplied S VIDEO connecting cable to connect to the S VIDEO OUT connector on the VCR.
- If your recording VCR is a monaural unit, make connections using the VCM-910MS/920MS cable (not supplied).
- When connecting the VCRs, do not connect both LINE IN and LINE OUT jacks on your VCR simultaneously. Doing so may cause a humming noise.

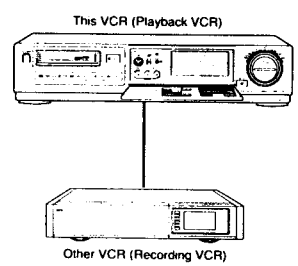
Editing onto the Other VCR

Here's how to use this VCR (as the playback VCR) and the other VCR (as the recording VCR).



Before you begin

- Press EDIT so that the EDIT indicator lights up in the display window of this VCR.
  If your recording VCR has an editing function, this function should also be selected to improve reception.
- Press DISPLAY to turn off the information on the screen. Otherwise, the information on the screen will be recorded.



Operation

1 Turn on the other (recording) VCR and insert a blank cassette.

2 Insert a source cassette into this (playback) VCR.

3 Locate the playback start point and select the playback pause mode on this VCR.

4 Locate the recording start point and select the recording pause mode on the other VCR.

5 Press II PAUSE on both VCRs.
For best results, press II PAUSE on this (playback) VCR just before pressing II PAUSE on the other VCR. When you've finished editing, press ■ STOP on both VCRs.

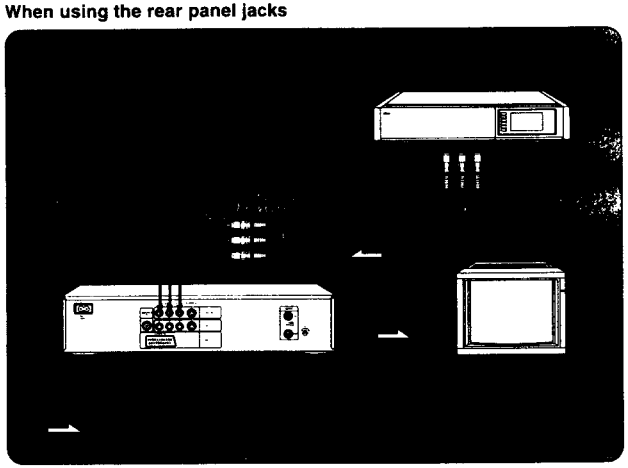
Assemble Editing/Insert Editing

When connecting to equipment that has the LANC connector, you can take advantage of the synchronized editing function. For the synchronized editing, see page 50.

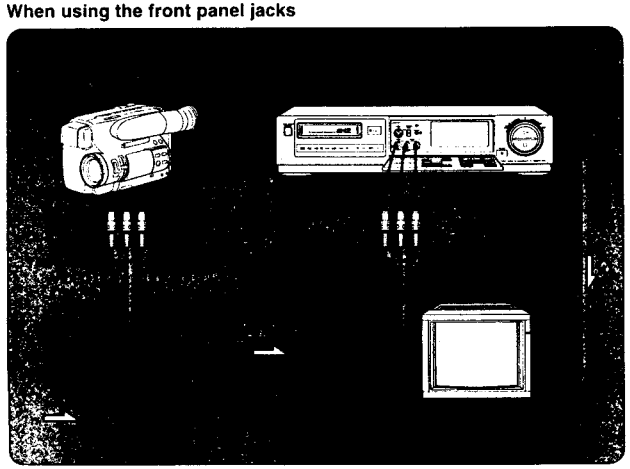
Connections

You can use the jacks located on the front panel or rear panel to perform this operation.

When using the rear panel jacks



When using the front panel jacks



Notes:

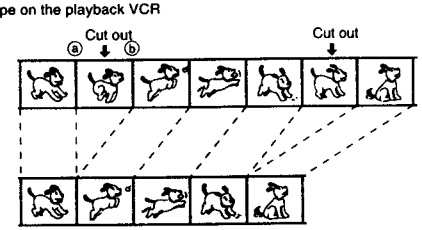
- When connecting the VCRs, do not connect both LINE IN and LINE OUT jacks on your VCRs simultaneously.
- If your playback VCR is a monaural unit, connect the white plug to LINE IN 2 AUDIO L on this VCR. This lets you record the sound of the playback VCR on both channels of this VCR. Do not connect the white plug to LINE IN 2 AUDIO R.
- To avoid deterioration of picture quality, remember to switch on the EDIT function of the other VCR if the EDIT function is provided with that VCR.

Assemble Editing

Before you begin

- Select the tape speed (SP or LP) using TAPE SPEED.
- Press INPUT SELECT to select LINE IN 1 or LINE IN 2.
  (When connected to the rear panel, select LINE IN 1. When connected to the front panel, select LINE IN 2.)
  The L1 or L2 indicator appears in the display window of the VCR.

Tape on the playback VCR



Tape on the recording VCR

Operation

1 Insert a recorded cassette into the other (playback) VCR and a cassette for recording into this (recording) VCR.

2 Record on this VCR while viewing the playback picture of the other VCR and have the VCR enter recording pause mode at the point (point ⓐ) where you want to cut out.

3 Release the recording pause at the point where you want to start recording again (point ⓑ).

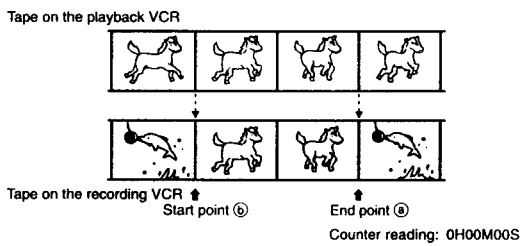
4 Repeat steps 2 and 3 to make a newly-composed tape.
When you've finished editing, press ■ STOP on both VCRs.

Insert Editing

Before you begin

- Select the tape speed in which the cassette was recorded.
- Press INPUT SELECT to select LINE IN 1 or LINE IN 2.

  (When connected to the rear panel, select LINE IN 1. When connected to the front panel, select LINE IN 2.)
  The L1 or L2 indicator appears in the display window of the VCR.



Operation

1 Insert a recorded cassette into the other (playback) VCR and a cassette for recording into this (recording) VCR.

2 Locate the editing end point (ⓐ) by playing back the cassette on this VCR and press COUNTER RESET.
The counter reads "0H00M00S".

3 Rewind the tape on this VCR and put the VCR in recording pause mode at the editing start point (ⓑ).

4 Play the tape on the other VCR and put it in playback pause mode at the point where the scene to be inserted appears on the screen.

5 Release recording pause mode of this VCR and playback pause mode of the other VCR simultaneously.

6 Press ■ STOP on this VCR to stop the recording at the editing end point (counter reading reaches to 0H00M00S) set in step 1.

7 Press ■ STOP of the other VCR to stop the playback.

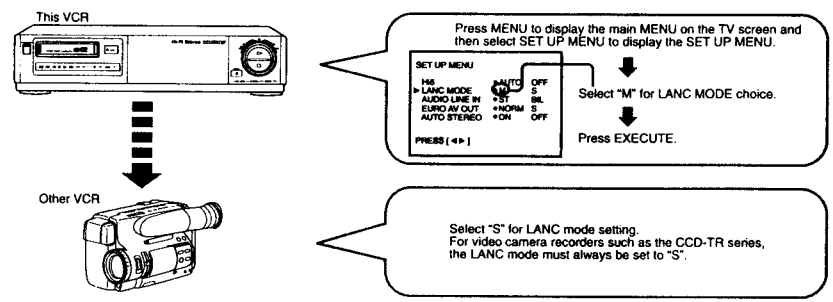
Synchronized Editing

If your other VCR has a control L or S connector, you can take advantage of a feature called "Synchronized Editing". Synchro-Edit controls both VCRs (recording VCR and playback VCR), and releases the pause when SYNCHRO EDIT is pressed. To use this function, you must connect the control cable in addition to connecting the audio and video cables. There are two types of control cables: the control L (REMOTE) cable and the control S cable. Use the one corresponding to the type of connector on the VCR.
After you have made the connections on page 51, you must choose the LANC MODE if you use the LANC cable. For details, see below and page 53.

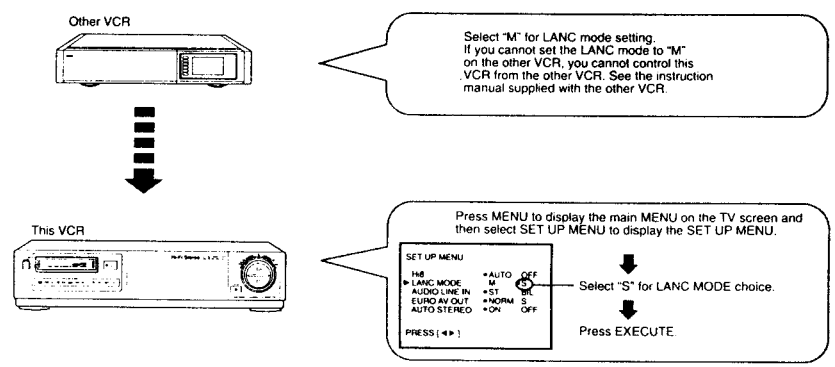
Setting the LANC Mode

When you perform synchronized editing with the control L jack, remember to set the LANC MODE as described below: Be sure this setting is correct before you begin editing, since it decides which VCR controls which.
For details, refer to page 53.

When you want to control the other VCR from this VCR



When you want to control this VCR from the other VCR

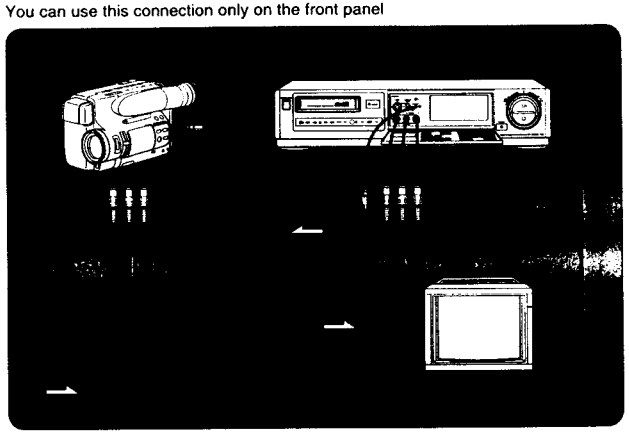


Notes:

- When connecting the VCRs, do not connect both LINE IN and LINE OUT jacks on your VCRs simultaneously. Doing so may cause a humming noise.
- If your playback VCR is a monaural unit, connect the white plug to LINE IN 2 AUDIO L on this VCR. This lets you record the sound of the playback VCR on both channels of this VCR. Do not connect the white plug to LINE IN 2 AUDIO R.
- If the other VCR has a LANC connector and a CONTROL S connector, use the LANC connector. Do not make the LANC and CONTROL S connections simultaneously.
- When the REMOTE connector of the other VCR is a stereo mini-mini plug, use the control L cable (supplied). If it is a 5-pin DIN connector, use the VK-810 control L cable (not supplied).

Connecting Video Equipment with the LANC Connector

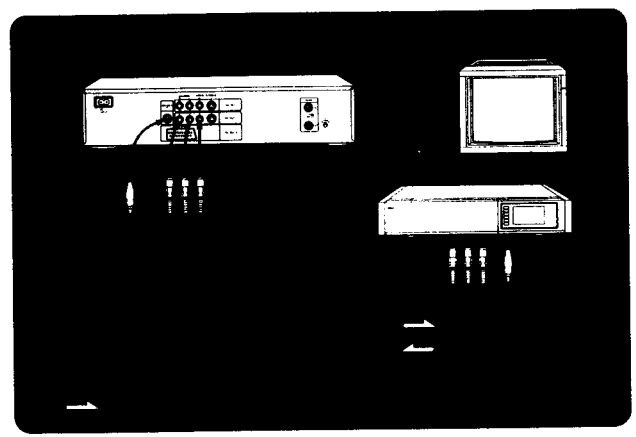
You can use this connection only on the front panel



About the (LANC)
LANC stands for Local Application Control System.
The LANC connector is used for controlling the tape transport of video equipment and peripherals connected to it. This connector has the same function as the connectors indicated as CONTROL L or REMOTE.

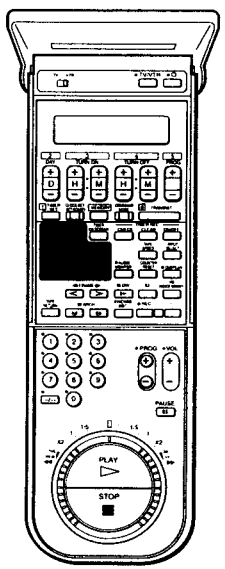
Connecting Video Equipment with the CONTROL S Connector

You can use this connection only on the rear panel. You cannot control another VCR, using this connection.



When using the CONTROL S cable

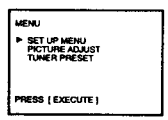
Set the commander mode of this VCR and the other video equipment to the same position.
If the other video equipment has the synchronized function, use the SYNCHRO EDIT button on other equipment.
Comparing to the synchronized editing using the LANC connector, the synchronized editing using the CONTROL S connector only enables you to pause both VCRs and release the pause mode of both VCRs.



LANC MODE Setting

After you have made the Control L cable connection, you must choose the LANC MODE setting. Display the SET UP MENU for this setting. For how to display the SET UP MENU and set items, see page 20.

1 Press MENU to call up the SET UP MENU.

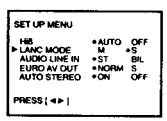


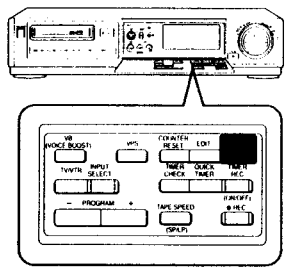
2 Choose a LANC MODE option.

M: to control the other VCR with this VCR.

S: to control this VCR with the other VCR or editing controller.

3 Press EXECUTE to return to the original screen.





Synchronized Assemble Editing

Before you begin

- Press TAPE SPEED to select the tape speed (SP or LP).
- Press INPUT SELECT to select LINE IN 1 or LINE IN 2.
  (When connected to the rear panel, select LINE IN 1. When connected to the front panel, select LINE IN 2).
  The L1 or L2 indicator appears in the display window of the VCR.
- Check the LANC MODE setting (see page 53).

During synchronized editing

- The edit function is activated automatically.
- The SYNCHRO EDIT buttons on the VCR and on the Remote Commander function the same. However, the DUAL MODE SHUTTLE rings on the VCR and on the Remote Commander do not function the same. If you use the DUAL MODE SHUTTLE ring on the Remote Commander in recording pause mode or playback pause mode, you cannot transport the tape in the reverse direction.

Operation

1 Insert a recorded cassette into the other (playback) VCR and a cassette for recording into this (recording) VCR.

2 Locate the recording start point on this VCR and put the VCR in recording pause mode.

3 Locate the beginning of the scene to be edited out on the other VCR and put the VCR in playback pause mode.

4 Press SYNCHRO EDIT on this VCR or on the Remote Commander. The SYNCHRO EDIT indicator lights up.
Pause mode of both the recording VCR and the playback VCR is released to start editing.

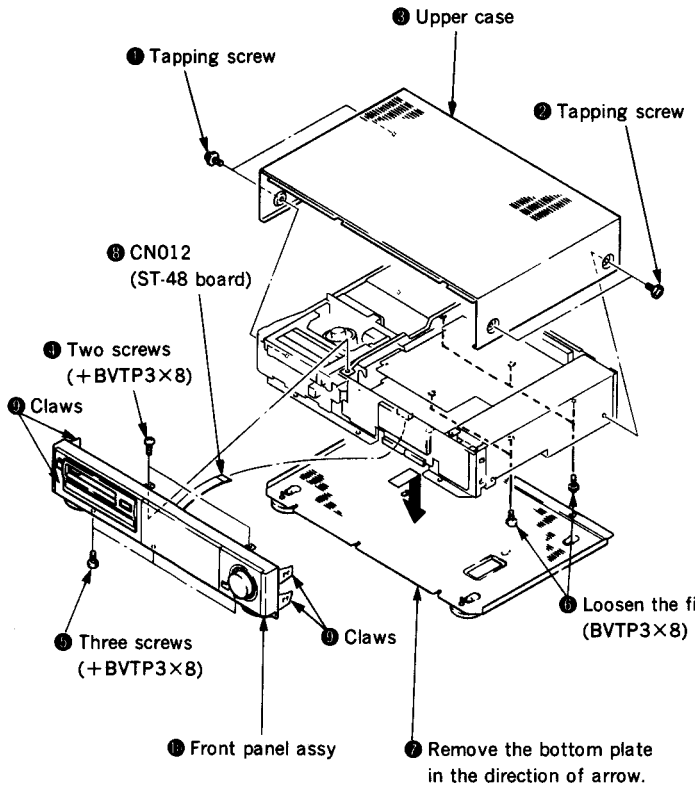
5 Press SYNCHRO EDIT on this VCR or on the Remote Commander at the point where you want to stop recording.
This VCR enters recording pause mode, and the other VCR enters playback pause mode.

6 If you have another scene you want to edit, repeat steps 3 to 5.

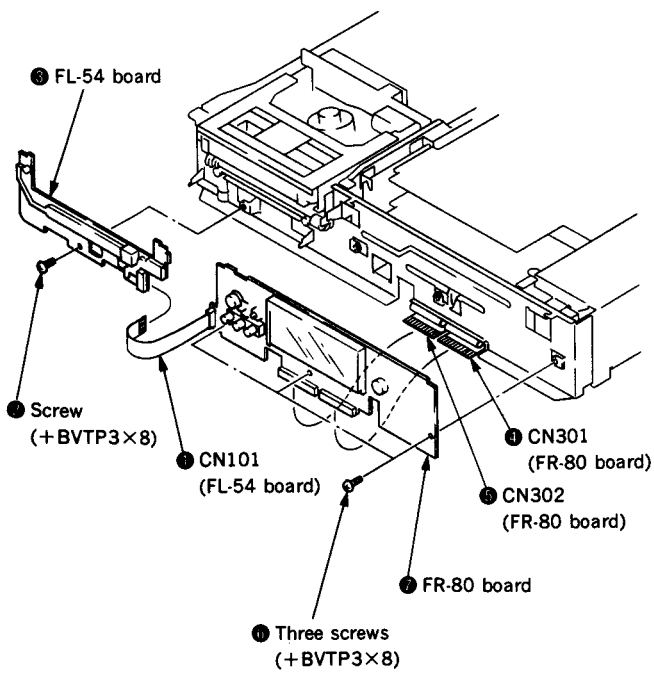
7 After editing has completed, press ■ STOP on both VCRs.

SECTION 3
DISASSEMBLY

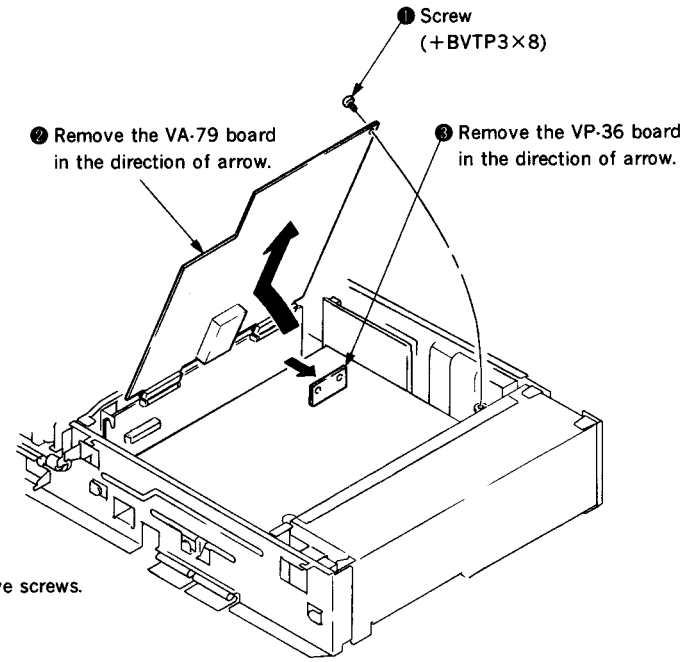
3-1. REMOVAL OF UPPER CASE, BOTTOM PLATE AND FRONT PANEL



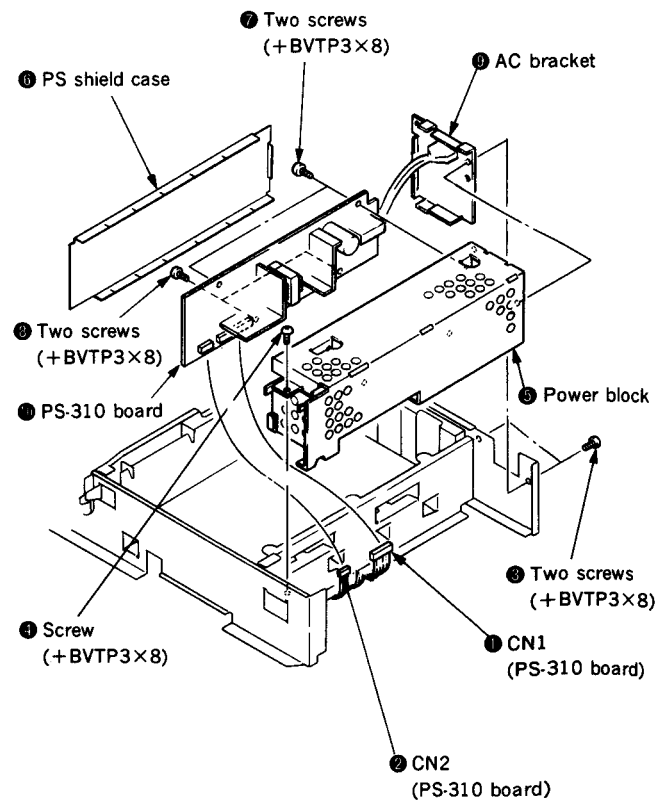
3-2. REMOVAL OF FL-54 AND FR-80 BOARDS



3-3. REMOVAL OF VA-79 AND VP-36 BOARDS (VP-36 BOARD: EV-S880E only)

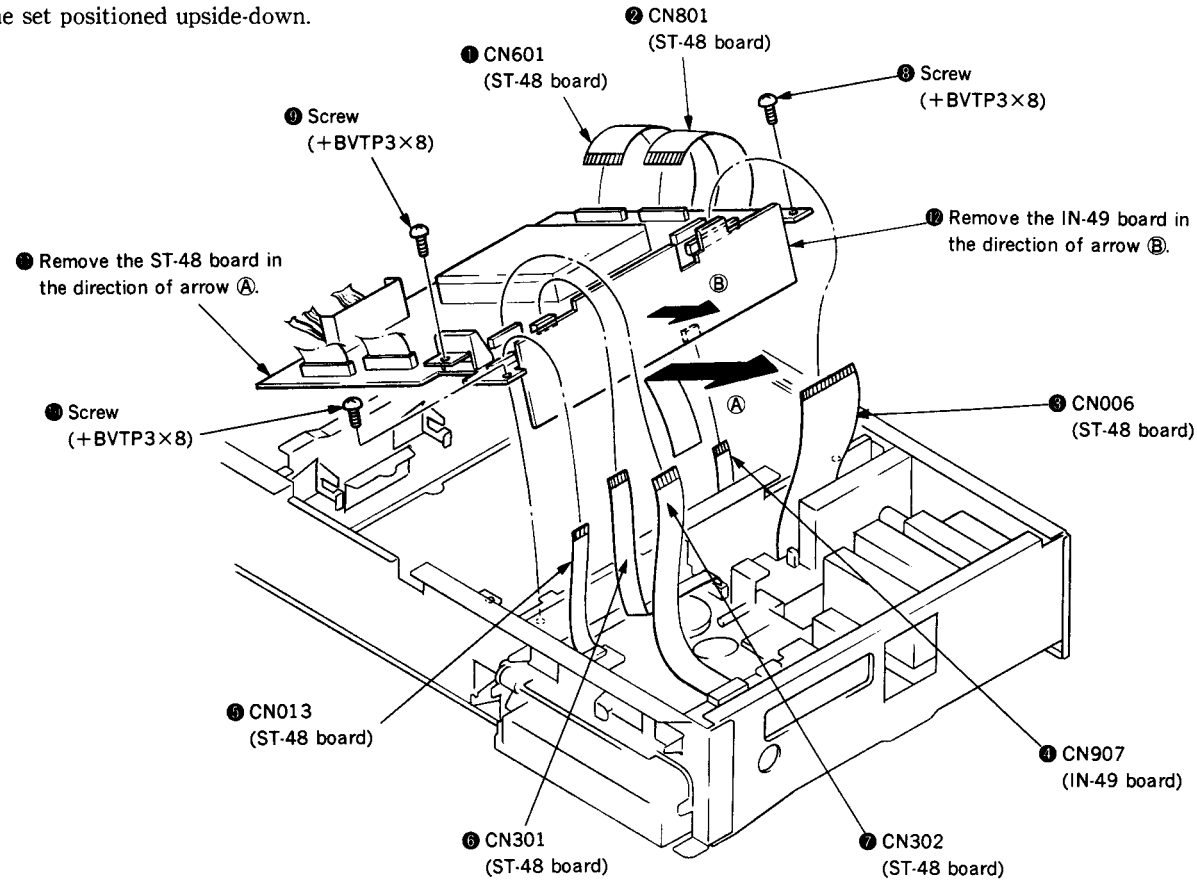


3-4. REMOVAL OF PS-310 BOARD



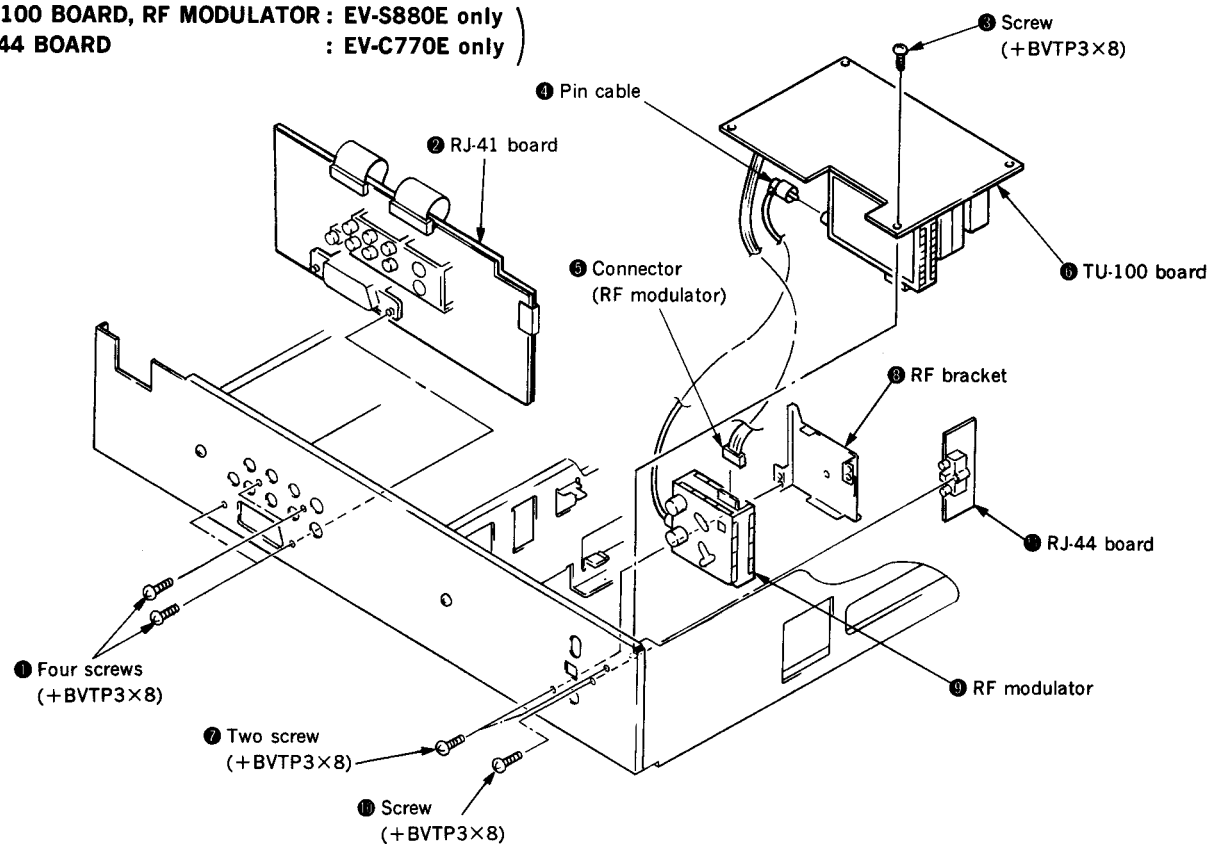
3-5. REMOVAL OF ST-48 AND IN-49 BOARDS

The set positioned upside-down.



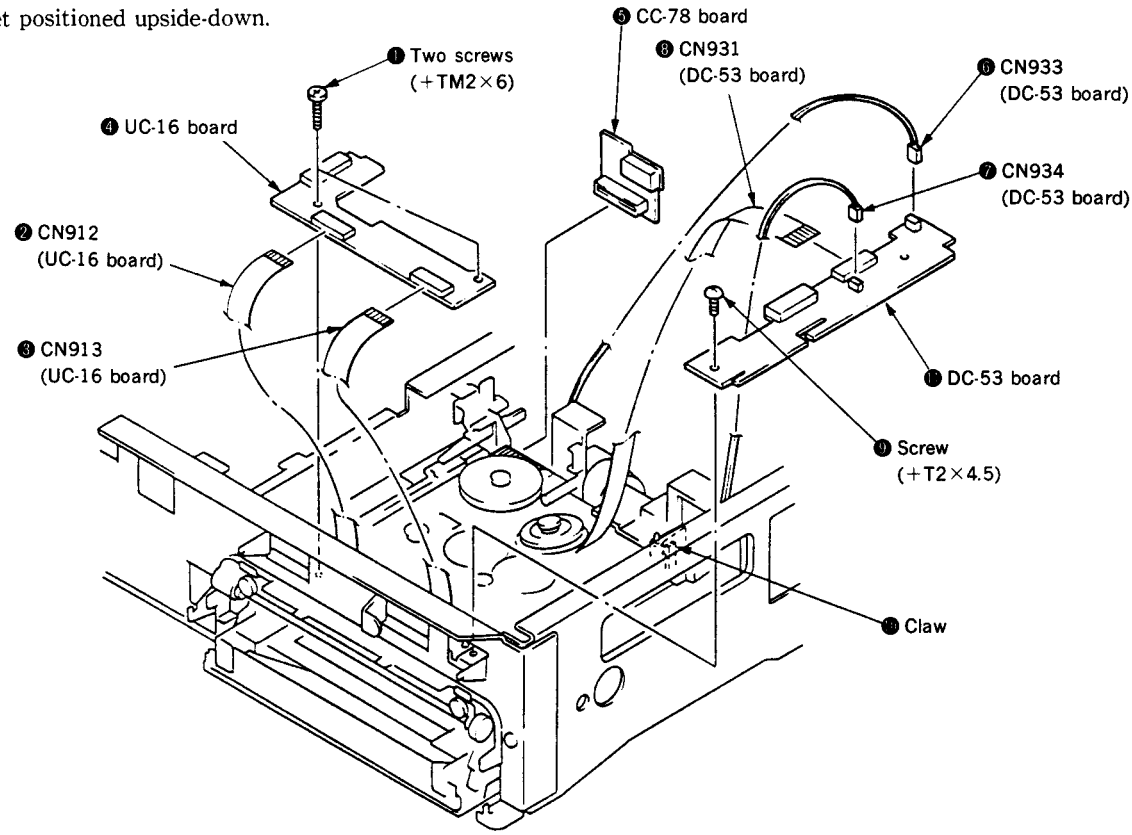
3-6. REMOVAL OF RJ-41, RJ-44, TU-100 BOARD AND RF MODULATOR

(TU-100 BOARD, RF MODULATOR : EV-S880E only
RJ-44 BOARD : EV-C770E only)

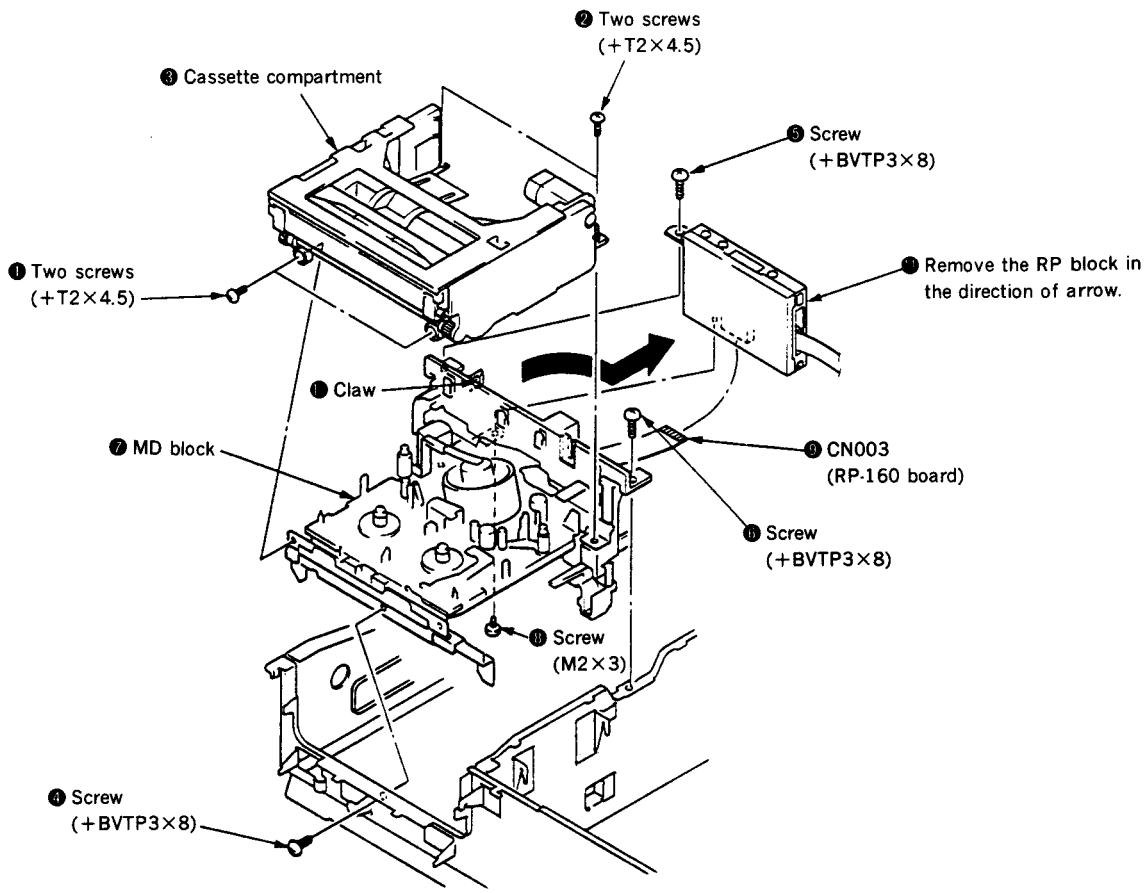


3-7. REMOVAL OF UC-16, DC-53 AND CC-78 BOARDS

The set positioned upside-down.



3-8. REMOVAL OF CASSETTE COMPARTMENT, MD BLOCK AND RP BLOCK



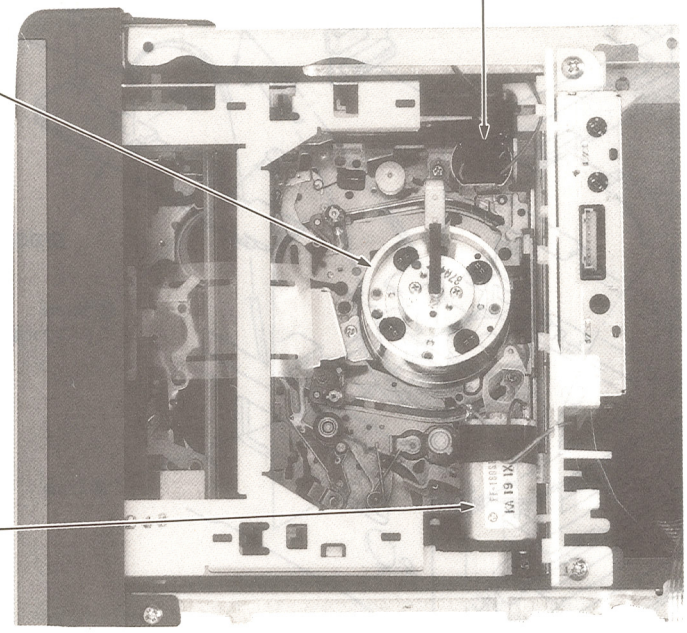
3-9. INTERNAL VIEWS

—Upper side—

M903
Loading Motor
A-7040-324-A

M901

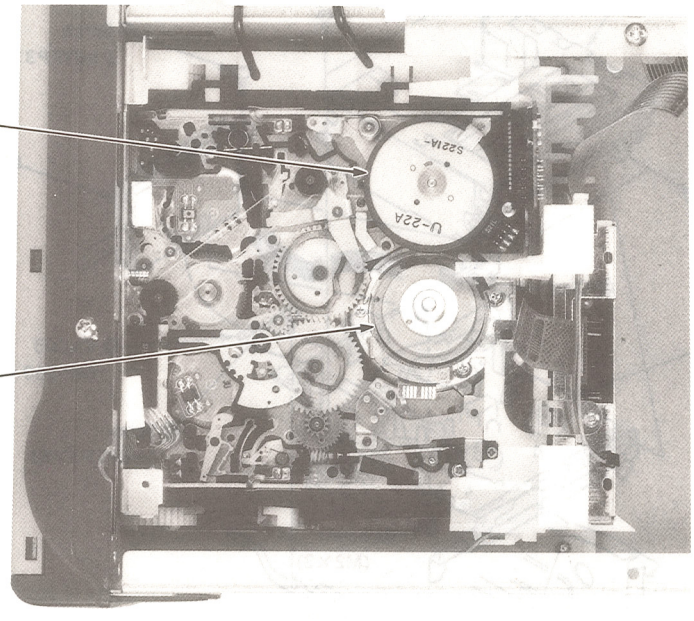
Drum assy	A-7048-671-A (DGU-0A4A-R)
Drum upper	A-7049-611-A (DGR-0A4-R)



M904
Front loading motor
X-3731-108-1

—Lower side—

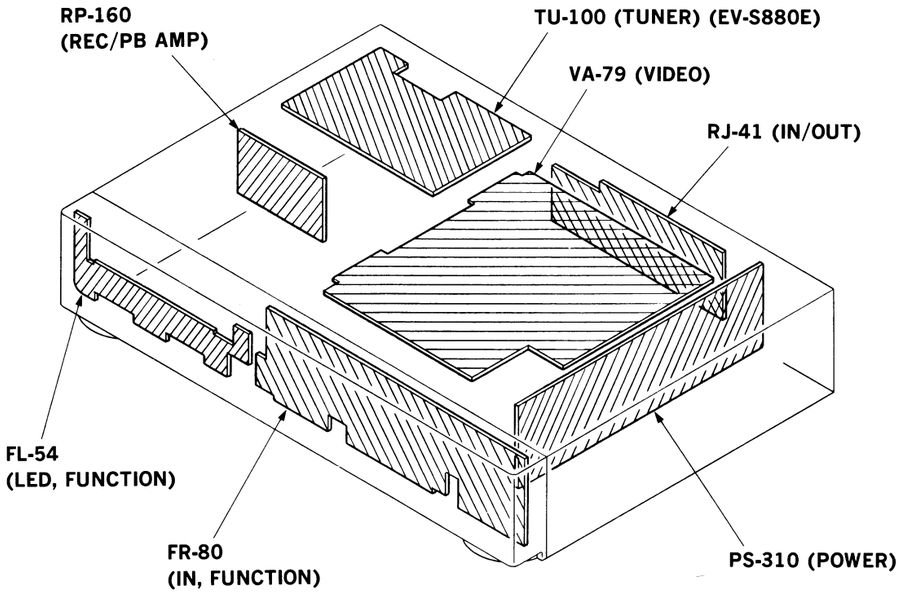
M902
Capstan motor
8-835-331-01

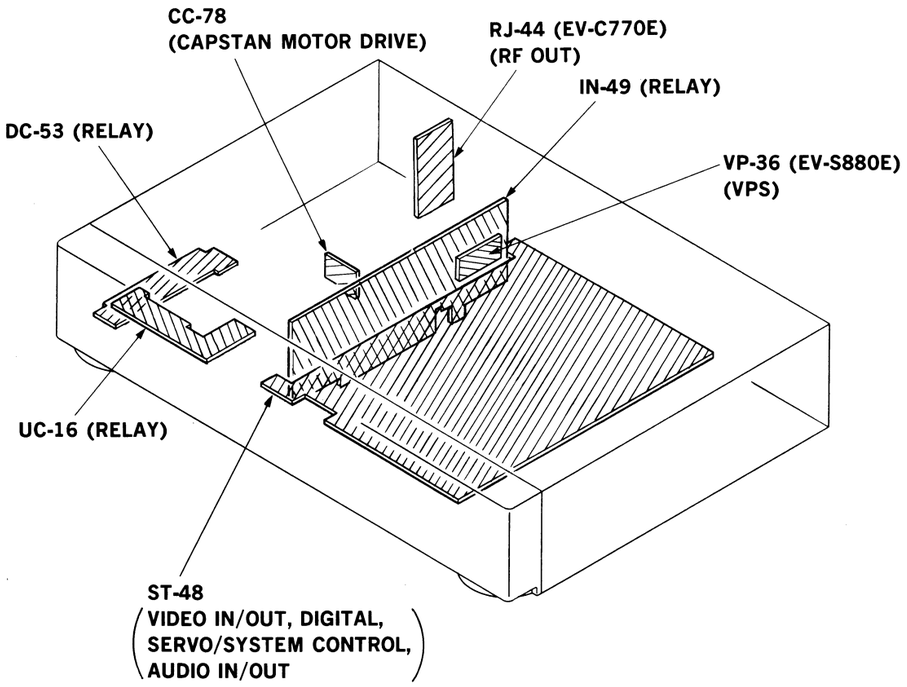


Drum motor

SECTION 4
DIAGRAMS

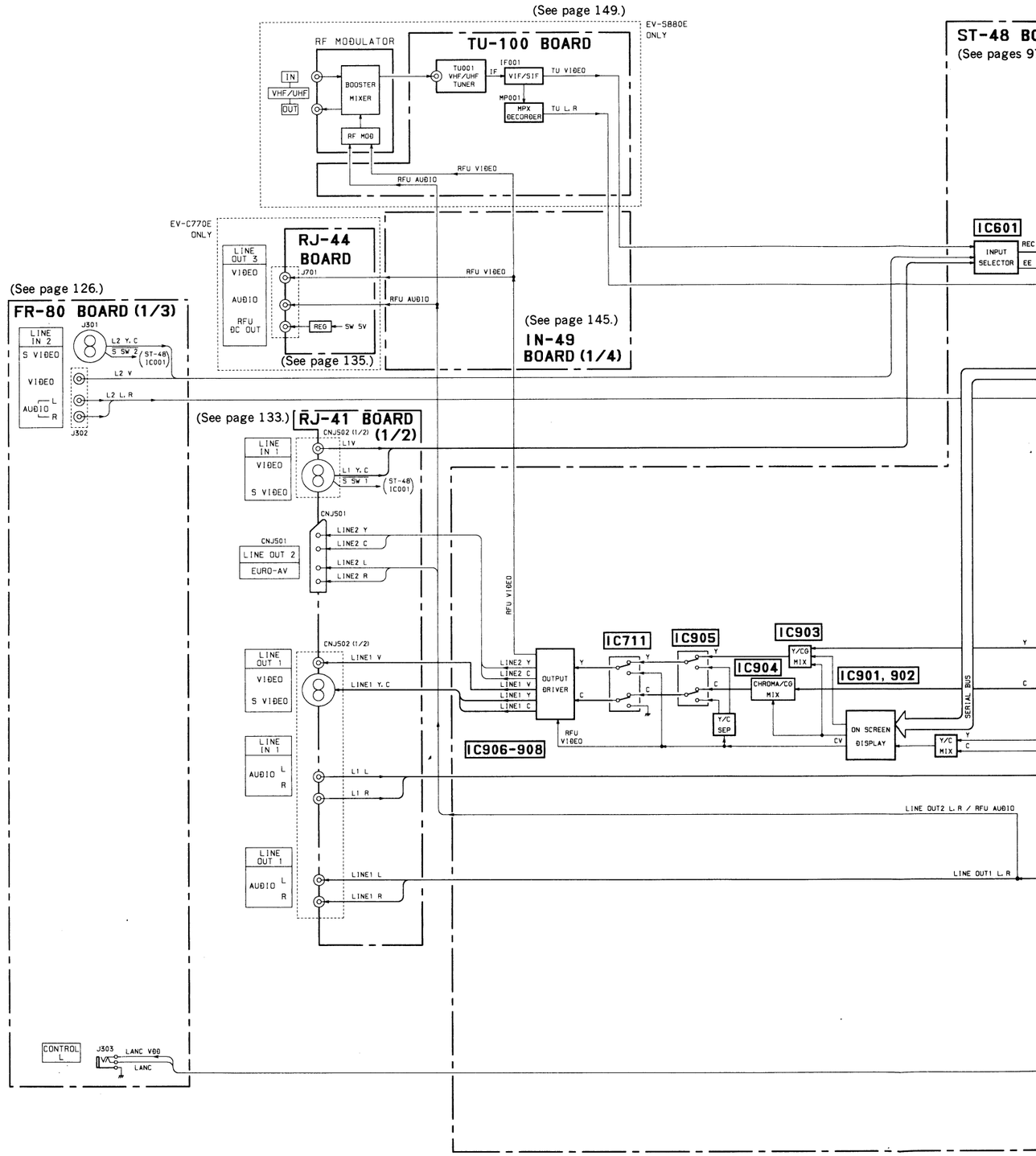
4-1. CIRCUIT BOARDS LOCATION





4-2. OVERALL BLOCK DIAGRAM

● The boards which signals only pass through may be omitted.



EV-5880E
ONLY

ST-48 BOARD
(See pages 97, 107, 113, 117.)

IN-49 BOARD
(1/4)
(See page 145.)

VA-79 BOARD
(See pages 87, 92, 94.)

(See page 77.)

RP-160 BOARD

DC-53 BOARD (1/2)

ST-48 BOARD (See pages 97, 107, 113, 117.)

(See page 136.)

CC-78 BOARD

UC-16 BOARD

(See page 145.)

IN-49 BOARD (1/4)

(See page 141.)

FP-89, FP-90 FLEXIBLE BOARD

DC-53 BOARD (1/2)

IC001 (1/2) MODE CONTROL

IC006

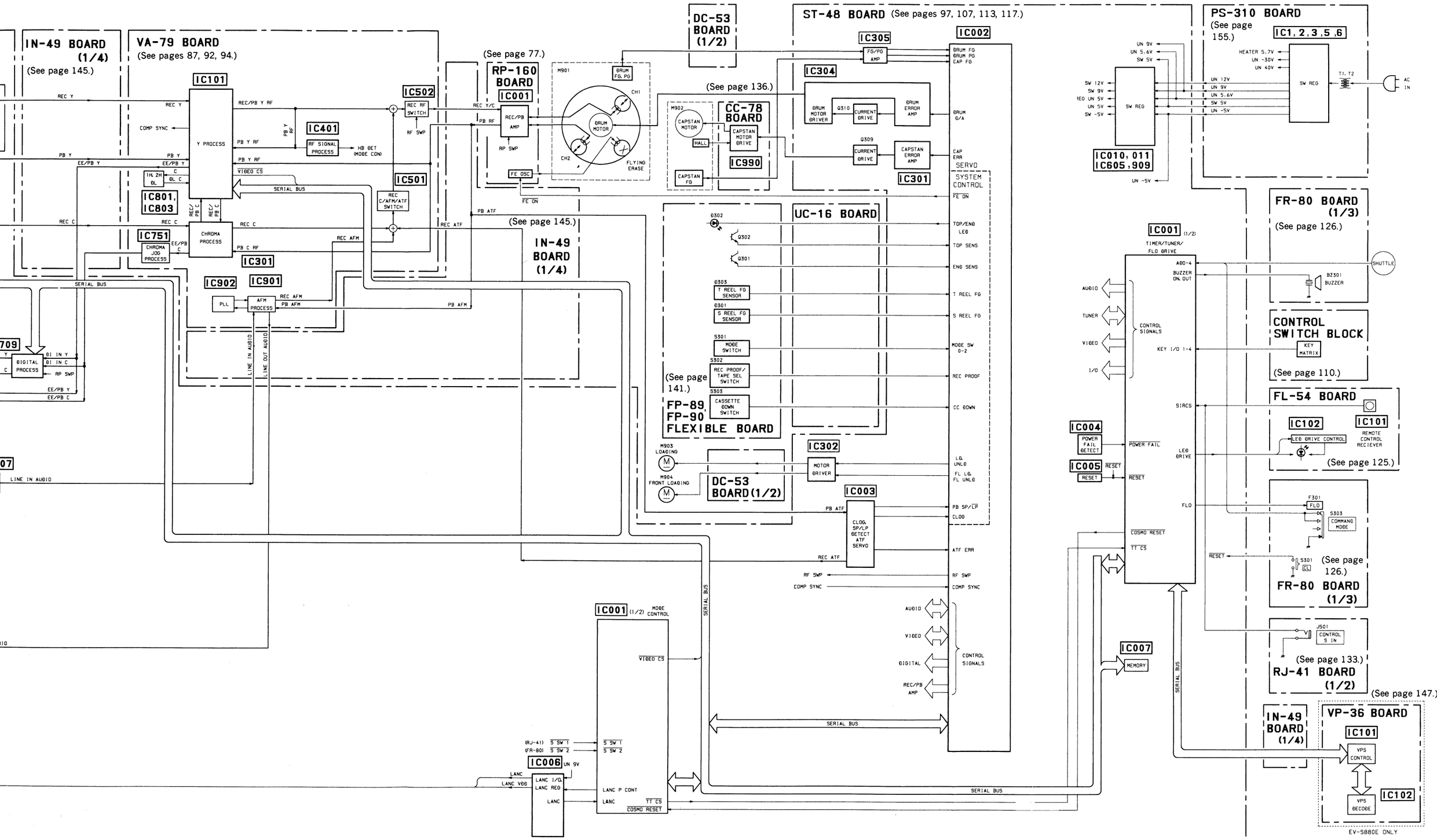
SERIAL BUS

LINE IN AUDIO

LINE OUT AUDIO

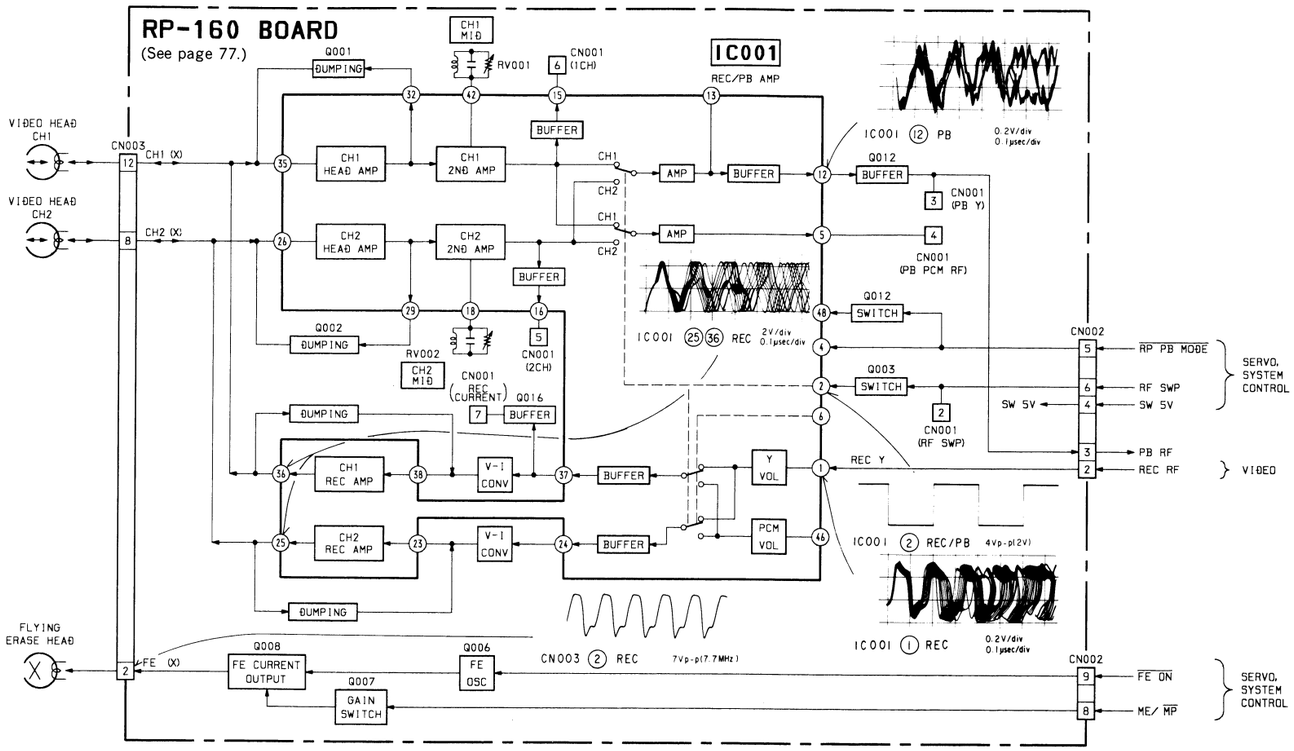
LINE OUT2 L, R / RFU AUDIO

LINE OUT1 L, R


IN-49 BOARD (1/4)
(See page 145.)
VA-79 BOARD
(See pages 87, 92, 94.)
IC101
Y PROCESS
IC502
REC RF SWITCH
IC401
RF SIGNAL PROCESS
HB DET (MODE CON)
IC501
REC C/AFM/ATF SWITCH
IC751
CHROMA JOG PROCESS
CHROMA PROCESS
IC301
IC902
PLL
IC901
AFM PROCESS
IC801, IC803
DC-53 BOARD (1/2)
(See page 77.)
RP-160 BOARD
IC001
REC/PB AMP
M901
DRUM MOTOR
DRUM FG, PG
CH1
CH2
FLYING ERASE
FE OSC
RP SWP
M902
CAPSTAN MOTOR
HALL
CAPSTAN FG
CC-78 BOARD
CAPSTAN MOTOR DRIVE
IC990
(See page 136.)
ST-48 BOARD (See pages 97, 107, 113, 117.)
IC305
FG/PG AMP
IC002
IC304
DRUM MOTOR DRIVER
Q310
CURRENT DRIVE
DRUM ERROR AMP
Q309
CAPSTAN ERROR AMP
IC301
SERVO
SYSTEM CONTROL
PS-310 BOARD
(See page 155.)
IC1, 2, 3, 5, 6
SW REG
T1, T2
AC IN
IC010, 011
IC605, 909
FR-80 BOARD (1/3)
(See page 126.)
IC001 (1/2)
TIMER/TUNER/ FLD DRIVE
SHUTTLE
BZ301 BUZZER
CONTROL SWITCH BLOCK
KEY MATRIX
(See page 110.)
FL-54 BOARD
IC102
IC101
REMOTE CONTROL RECIEVER
(See page 125.)
IC004
POWER FAIL DETECT
IC005
RESET
F301
FLD
S303
COMMAND MODE
S301
(See page 126.)
FR-80 BOARD (1/3)
J501
CONTROL S IN
(See page 133.)
RJ-41 BOARD (1/2)
IC007
MEMORY
(See page 147.)
IN-49 BOARD (1/4)
VP-36 BOARD
IC101
VPS CONTROL
VPS DECODE
IC102
EV-S880E ONLY
UC-16 BOARD
Q302
Q301
T REEL FG SENSOR
S REEL FG SENSOR
MODE SWITCH
REC PROOF/ TAPE SEL SWITCH
CASSETTE DOWN SWITCH
(See page 141.)
FP-89, FP-90 FLEXIBLE BOARD
M903 LOADING
M904 FRONT LOADING
IC302
MOTOR DRIVER
DC-53 BOARD (1/2)
IC003
CLOG, SP/LP DETECT ATF SERVO
IC006
LANC I/O
LANC REG
LANC P CONT
LANC
TT CS
COSMO RESET
SERIAL BUS
REC Y
COMP SYNC
PB Y
EE/PB Y
REC C
EE/PB C
REC/PB Y RF
PB Y RF
VIDEO CS
SERIAL BUS
REC/PB C RF
REC ATF
REC AFM
PB AFM
PB ATF
PB RF
RF SWP
FE ON
LINE IN AUDIO
LINE OUT AUDIO
DIGITAL PROCESS
DI IN Y
DI IN C
RP SWP
709
07
DRUM FG
DRUM PG
CAP FG
DRUM E/A
CAP ERR
TOP/END LED
TOP SENS
END SENS
T REEL FG
S REEL FG
MODE SW 0-2
REC PROOF
CC DOWN
LD UNLD
FL LD FL UNLD
PB SP/LP
CLOG
ATF ERR
RF SWP
COMP SYNC
AUDIO
VIDEO
DIGITAL
REC/PB AMP
CONTROL SIGNALS
UN 9V
UN 5.6V
SW 5V
SW 12V
SW 9V
REG UN 5V
UN 5V
SW -5V
UN -5V
HEATER 5.7V
UN -30V
UN 40V
ADD-4
BUZZER ON OUT
AUDIO
TUNER
VIDEO
I/O
KEY I/O 1-4
SIRCS
LED DRIVE
FLD
POWER FAIL
RESET
COSMO RESET
TT CS
LED DRIVE CONTROL
COMMAND MODE
CONTROL S IN
(RJ-41) S SW 1
(FR-80) S SW 2
S SW 1
S SW 2
LANC
LANC VDD
UN 9V

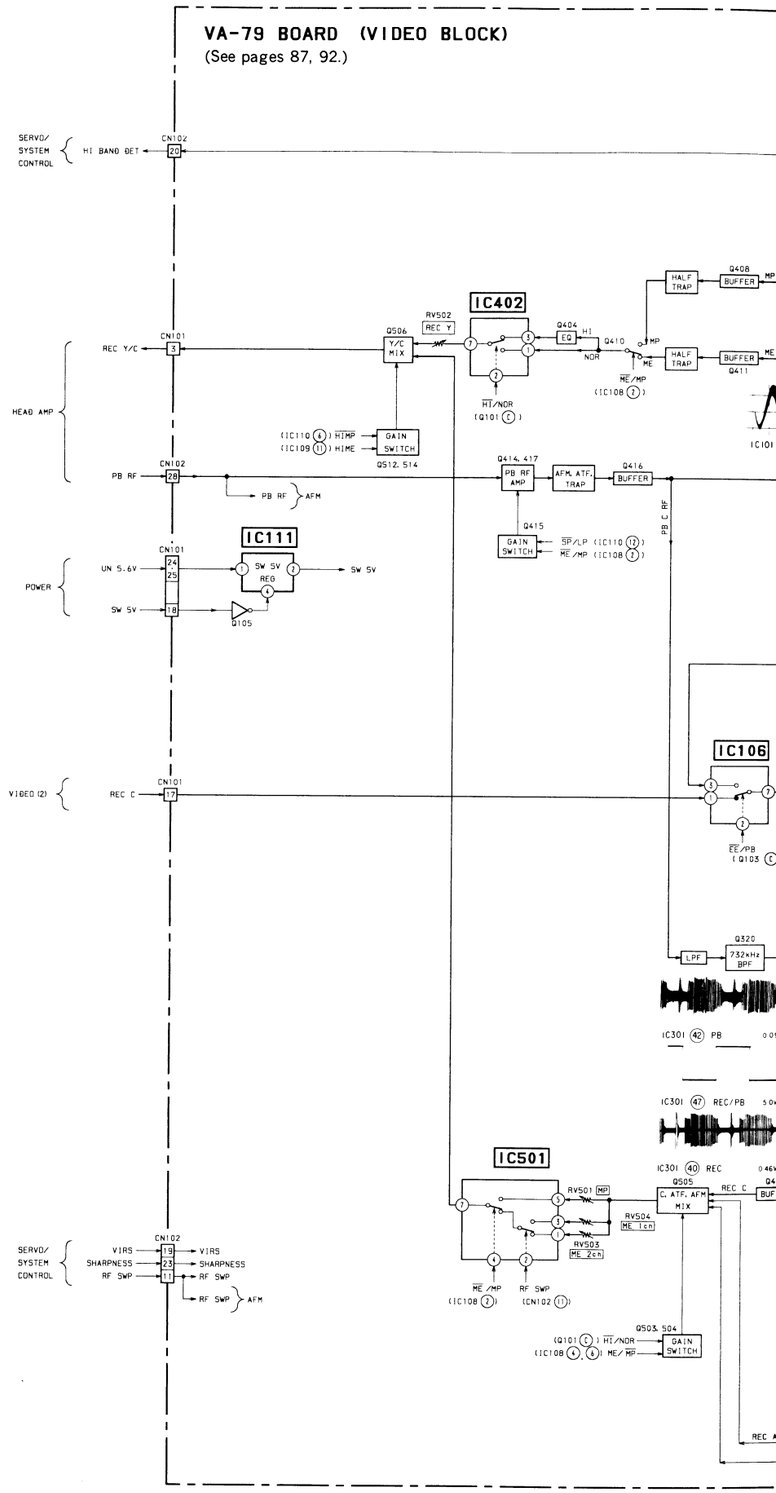
4-3. REC/PB AMP BLOCK DIAGRAM

● The boards which signals only pass through may be omitted.



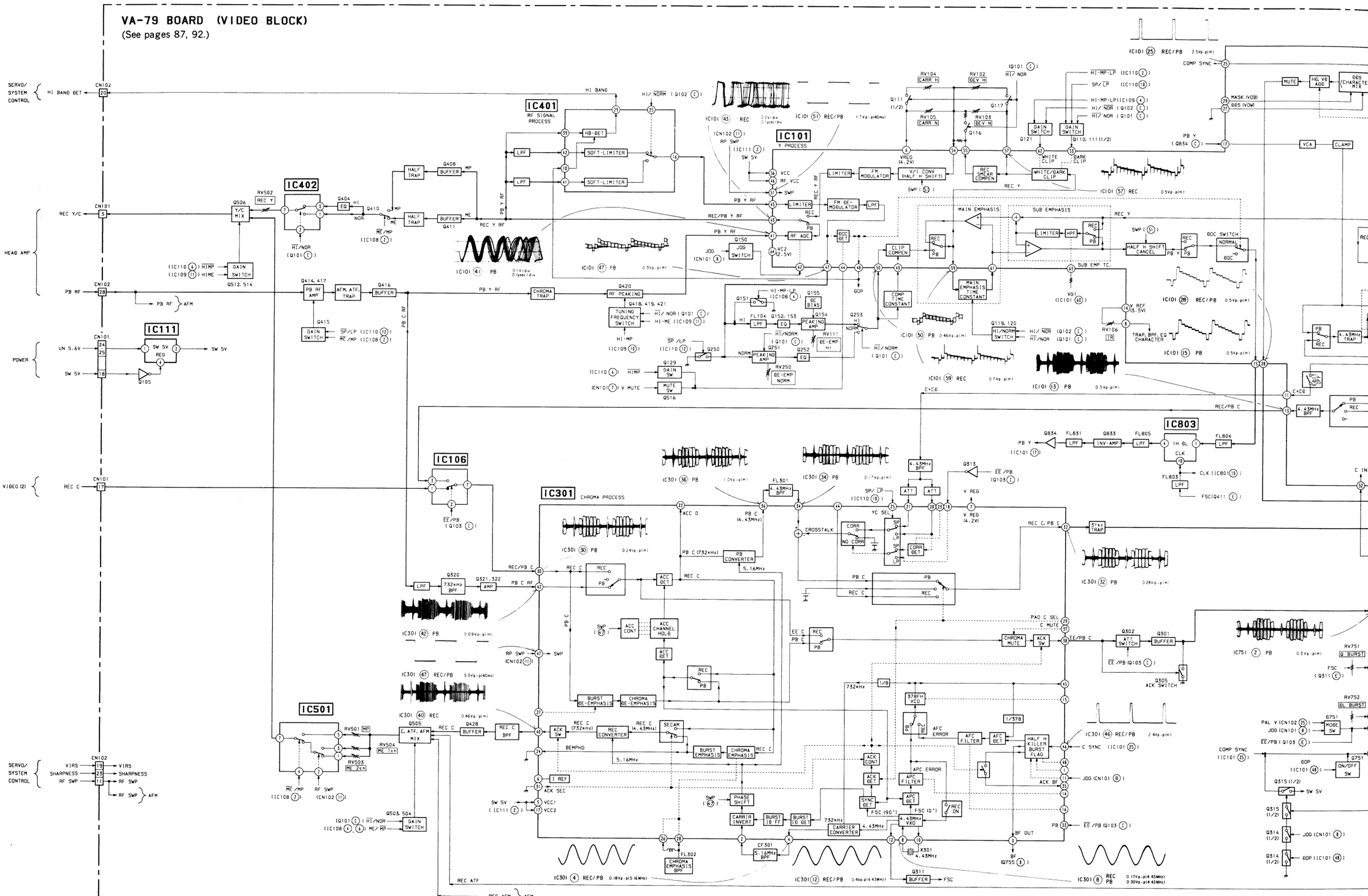
4-4. VIDEO (1) BLOCK DIAGRAM

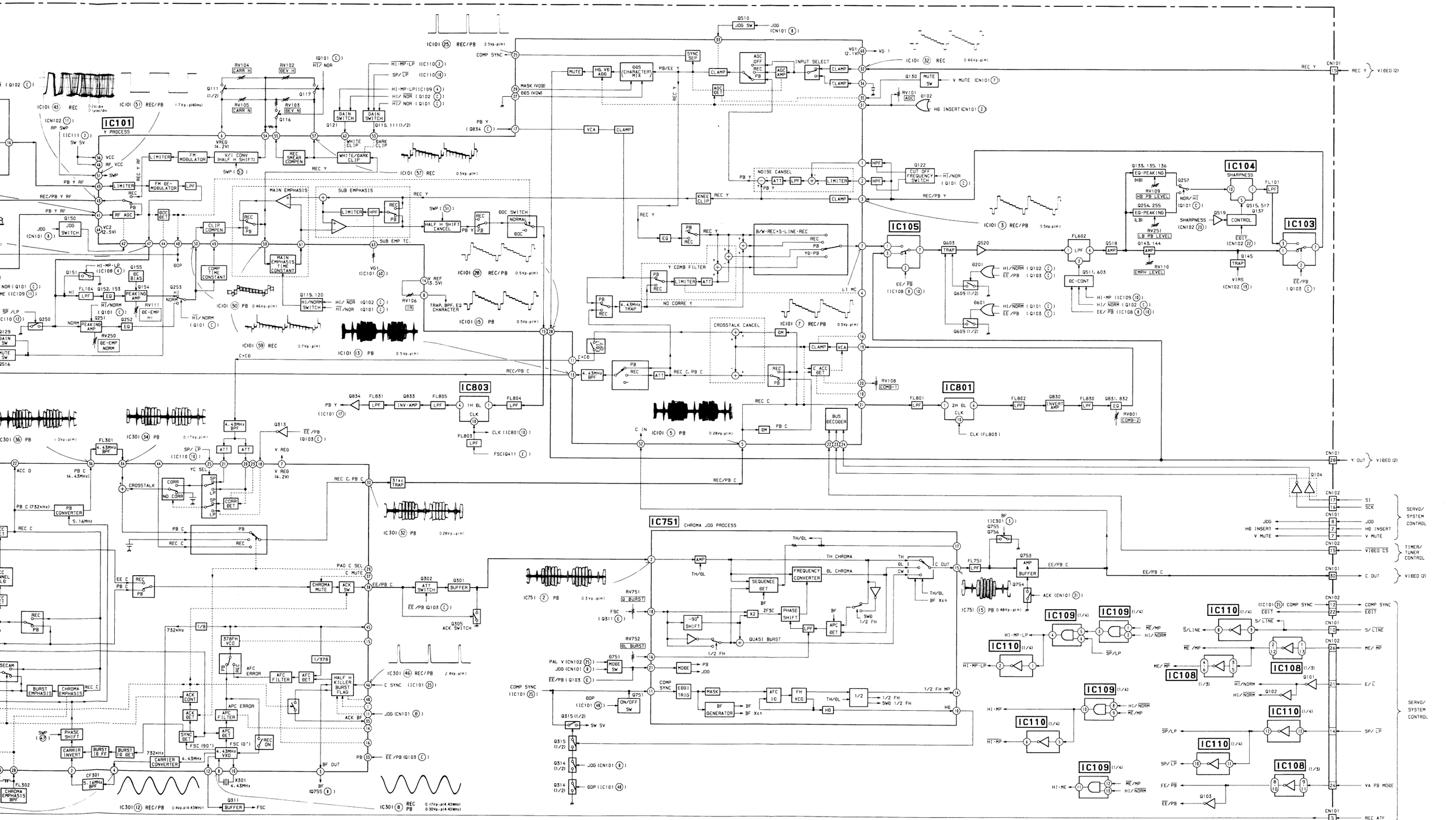
● The boards which signals only pass through may be omitted.



4-4. VIDEO (1) BLOCK DIAGRAM

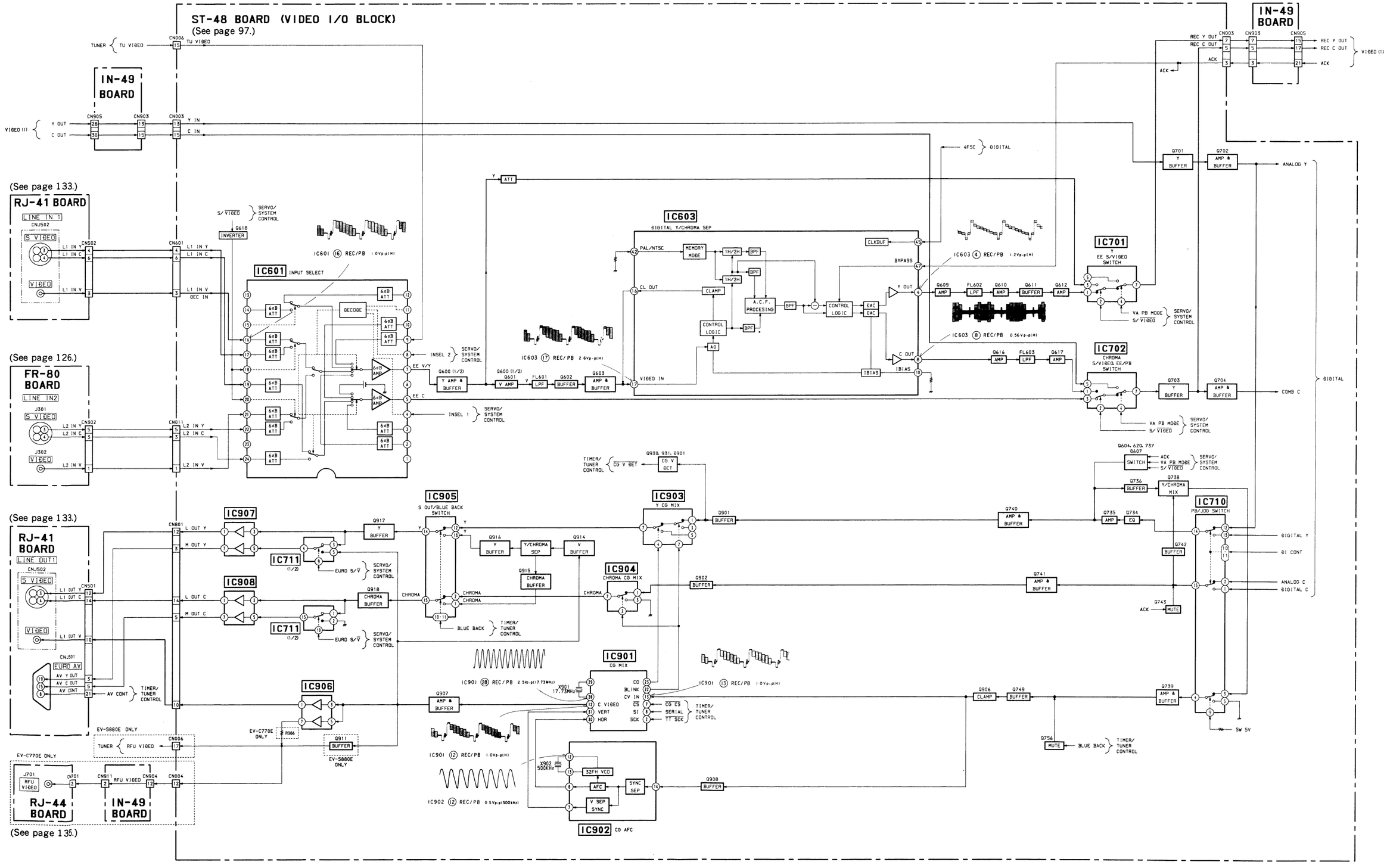
- The boards which signals only pass through may be omitted.




IC101
Y PROCESS
IC803
IC801
IC751
CHROMA JOG PROCESS
IC105
IC104
IC103
IC109
IC110
IC108
REC/PB Y
REC/PB C
REC Y
REC C
PB Y
PB C
VIDEO (2)
SERVO/ SYSTEM CONTROL
TIMER/ TUNER CONTROL

4-5. VIDEO (2) BLOCK DIAGRAM

● The boards which signals only pass through may be omitted.

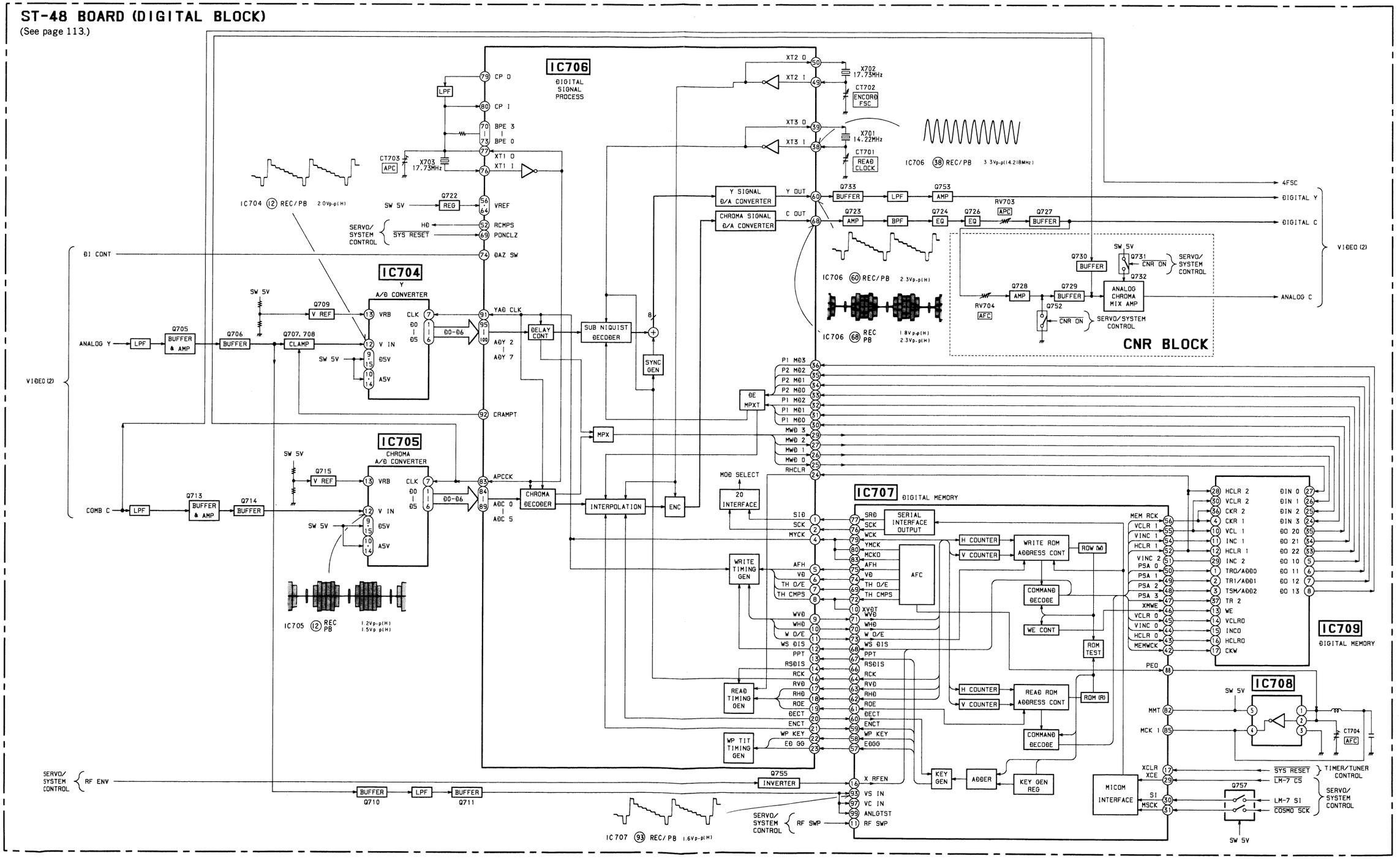


4-6. DIGITAL BLOCK DIAGRAM

● The boards which signals only pass through may be omitted.

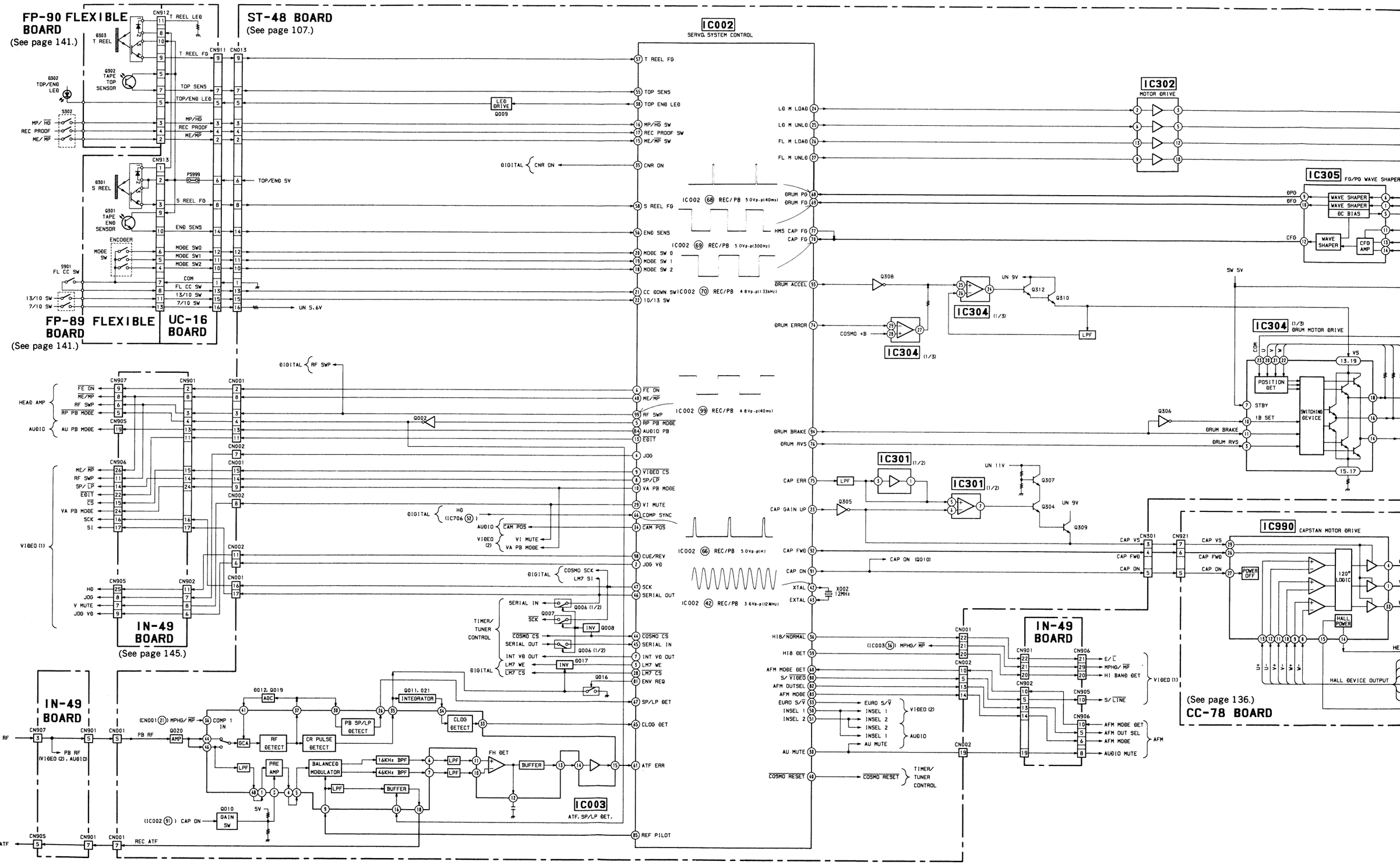
ST-48 BOARD (DIGITAL BLOCK)

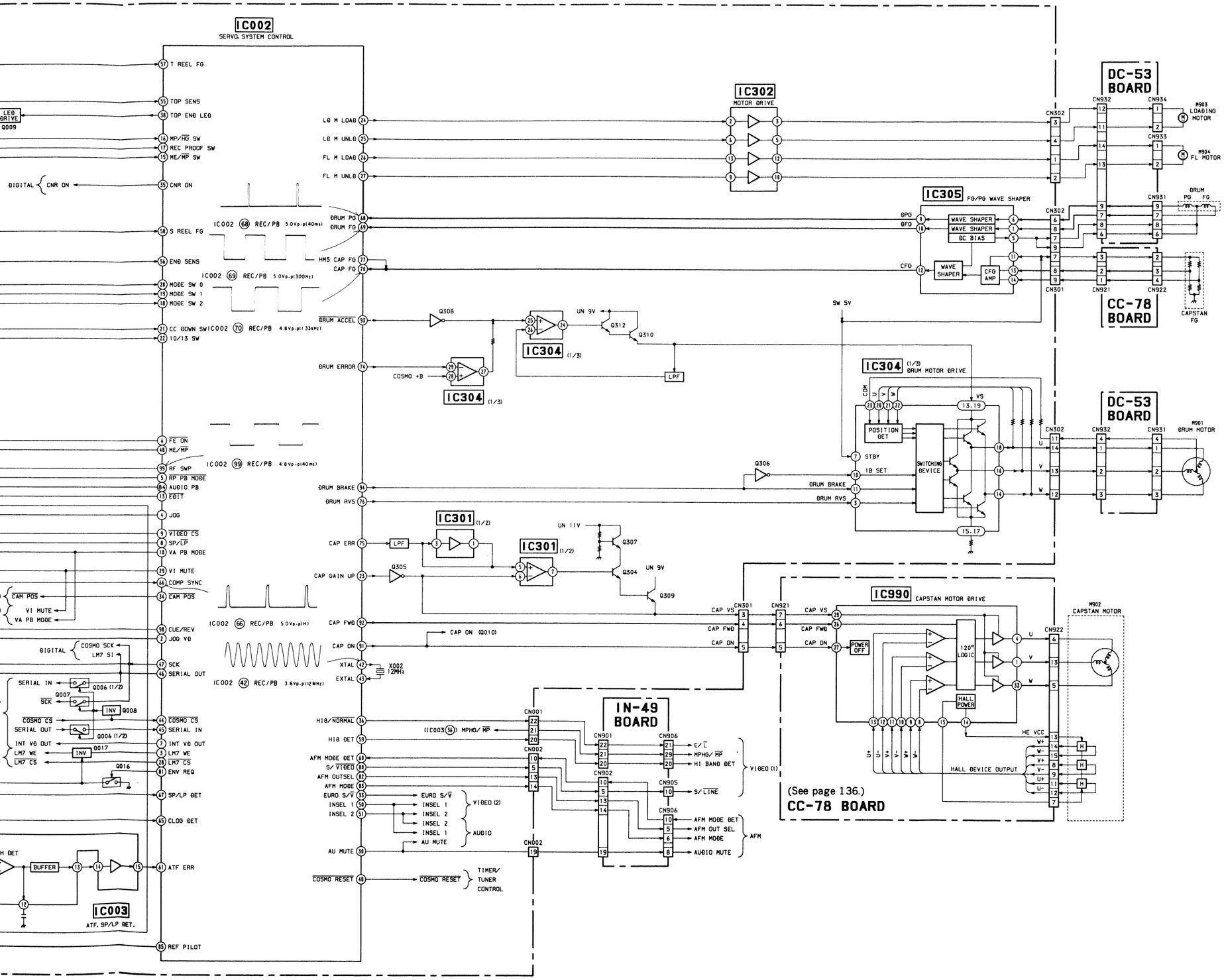
(See page 113.)



4-7. SERVO, SYSTEM CONTROL BLOCK DIAGRAM

- The boards which signals only pass through may be omitted.




IC002
SERVO SYSTEM CONTROL
T REEL FG
TOP SENS
TOP END LED
LED DRIVE
Q009
MP/HQ SW
REC PROOF SW
ME/MP SW
DIGITAL
CNR ON
S REEL FG
END SENS
MODE SW 0
MODE SW 1
MODE SW 2
CC DOWN SW
10/13 SW
FE ON
ME/MP
RF SWP
RP PB MODE
AUDIO PB
EDIT
JOG
VIDEO CS
SP/LP
VA PB MODE
VI MUTE
COMP SYNC
CAM POS
CUE/REV
JOG VD
COSMO SCK
LM7 SI
SCK
SERIAL OUT
SERIAL IN
Q006 (1/2)
Q007
INV
Q008
COSMO CS
SERIAL IN
INT VD OUT
Q017
LM7 WE
LM7 CS
Q016
ENV REQ
SP/LP DET
CLOG DET
BUFFER
ATF ERR
IC003
ATF, SP/LP DET.
REF PILOT
IC002 (68) REC/PB 5.0Vp-p(40ms)
IC002 (69) REC/PB 5.0Vp-p(300Hz)
IC002 (70) REC/PB 4.8Vp-p(133Hz)
IC002 (99) REC/PB 4.8Vp-p(40ms)
IC002 (66) REC/PB 5.0Vp-p(H)
IC002 (42) REC/PB 3.6Vp-p(12MHz)
LD M LOAD
LD M UNLD
FL M LOAD
FL M UNLD
DRUM PG
DRUM FG
HMS CAP FG
CAP FG
DRUM ACCEL
DRUM ERROR
COSMO +B
Q308
Q312
Q310
UN 9V
LPF
IC304 (1/3)
DRUM BRAKE
DRUM RVS
Q306
CAP ERR
CAP GAIN UP
Q305
IC301 (1/2)
Q307
Q304
Q309
UN 11V
UN 9V
CAP FWD
CAP ON
CAP ON (Q010)
XTAL
EXTAL
X002
12MHz
HI8/NORMAL
HI8 DET
AFM MODE DET
S/VIDEO
AFM OUTSEL
AFM MODE
EURO S/V
INSEL 1
INSEL 2
AU MUTE
COSMO RESET
TIMER/
TUNER
CONTROL
VIDEO (2)
AUDIO
IC302
MOTOR DRIVE
IC305
FG/PG WAVE SHAPER
DPG
DFG
CFG
WAVE SHAPER
DC BIAS
CFG AMP
SW 5V
IC304 (1/3)
DRUM MOTOR DRIVE
COM
VS
13.19
POSITION DET
STBY
IB SET
SWITCHING DEVICE
15.17
DC-53 BOARD
CC-78 BOARD
CN302
CN301
CN932
CN934
CN933
CN931
CN921
CN922
M903
LOADING MOTOR
M904
FL MOTOR
DRUM
PG FG
CAPSTAN FG
M901
DRUM MOTOR
IN-49 BOARD
CN001
CN002
CN901
CN902
CN906
CN905
(IC003 (34)) MPHG/MP
E/L
MPHG/MP
HI BAND DET
S/LINE
AFM MODE DET
AFM OUT SEL
AFM MODE
AUDIO MUTE
VIDEO (1)
AFM
IC990
CAPSTAN MOTOR DRIVE
CAP VS
CAP FWD
CAP ON
POWER OFF
120° LOGIC
HALL POWER
HALL DEVICE OUTPUT
HE VCC
M902
CAPSTAN MOTOR
(See page 136.)
CC-78 BOARD

4-8. SYSTEM CONTROL — VIDEO · AUDIO BLOCK INTERFACE (ST-48 BOARD)

Signal	Pin No.	I/O	VTR MODE												
			STOP	FF	REW	×2	−×2	PB	PICTURE SEARCH		PB・PAUSE	SLOW	REVERSE SLOW	REC	REC PAUSE
									CUE	REVIEW					
SP/$\overline{LP}$	IC002 ⑧	O	＊1	H	H	＊1	＊2	＊2	＊2	＊2	＊1	＊1	＊1	＊9	H/L
V PB MODE	IC002 ⑩	O	L	L	L	H	H	H	H	H	H	H	H	L	L
JOG VD	IC002 ②	O	L	L	L	＊3	＊3	L	＊3	＊3	＊3	＊3	＊3	L	L
RP PB MODE	IC002 ⑤	O	L	L	L	L	L	L	L	L	L	L	L	H	L
$\overline{FE\ ON}$	IC002 ⑥	O	H	H	H	H	H	H	H	H	H	H	H	L	H
RF SWP	IC002 ⑨⑨	O	L	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4	＊4
JOG	IC002 ④	O	L	L	L	H	H	L	H	H	H	H	H	L	L
SP/$\overline{LP}$ DET	IC002 ⑰	I	L	＊5	＊5	＊5	＊5	L	＊5	＊5	＊5	—	—	H	H
CLOG DET	IC002 ⑮	I	H	＊6	＊6	＊6	＊6	＊6	＊6	＊6	＊6	＊6	＊6	H	＊6
COMP SYNC	IC002 ⑯	I	＊7	＊7	＊7	＊7	＊7	＊7	＊7	＊7	＊7	＊7	＊7	＊7	＊7
AUDIO PB	IC002 ⑧④	O	L	L	L	＊8	＊8	H	＊8	＊8	H	＊8	＊8	L	L
AU MUTE	IC002 ③⓪	O	L	L	L	H	H	L	H	H	H	H	H	L	L
$\overline{VIDEO\ CS}$	IC002 ⑨	O	V-cycle"Low"pulse												
SO BUS	IC002 ④⑥	O	V-cycle pulse rank												
SCK	IC002 ④⑦	O	V-cycle"Low"pulse rank												

＊1. This outputs the result of determining what was the previous mode.
"High" output in SP mode,"Low" output in LP mode.
＊2. This outputs the result of determining which record mode the playback tape has.
＊3. Pseudo VD signal
＊4. Pulse of 25Hz,50% duty (synchronized with the rotation of the drum).
＊5. "High" at the SP record portion and "Low" at the LP record portion of tape.
＊6. "High" at the blank portion or at any drop out portion of tape.
Head clogging detection input.
＊7. Composite synch signal input separated from line input video signal,camera video signal or playback video signal. (This signal has positive polarity).
＊8. "Low" during shuttle editing from REC PAUSE,"High" while in any other mode.
＊9. This varies according to SP/LP switching. It becomes "High" when SP mode is entered and "Low" when LP mode is entered.

4-9. MECHANICAL CONTROL — SERVO BLOCK INTERFACE (ST-4

Signal	Pin No.	I/O			
			STOP	FF	REV
T.REEL FG	IC002 ⑤⑦	I	—	＊1	＊
S.REEL FG	IC002 ⑤⑧	I	—	＊1	＊
ATF ERROR	IC002 ⑥①	I	—	＊2	＊
DRUM PG	IC002 ⑥⑧	I	—	＊3	＊
DRUM FG	IC002 ⑥⑨	I	—	＊4	＊
CAP FG/HMS CAP FG	IC002 ⑦⓪ ⑦⑦	I	—	＊5	＊
CAP ON	IC002 ⑨①	O	L	H	H
REF PILOT	IC002 ⑧⑤	O	＊7	＊6	＊
RP PB MODE	IC002 ⑤	O	L	L	L
DRUM FWD/$\overline{RVS}$ ＊11	IC002 ⑦⑥	O	H	H	H
CAP FWD/$\overline{RVS}$	IC002 ⑨②	O	L	H	L
DRUM ERR	IC002 ⑦④	O	＊10	＊10	＊1
CAP ERR	IC002 ⑦⑤	O	L	＊10	＊1
DRUM ON ＊12	IC002 ⑦②	O	L	H	H

＊1. The amplitude modulated pulse is input by the rotation of the reel
(200msec period during REC/PB mode)
＊2. ATF error voltage input.
＊3. One PG pulse is input by one rotation of the drum. Approximately
＊4. Six FG pulses are input by one rotation of the drum. Approximate
＊5. 520 FG pulses are input by one rotation of the capstan. Approxim
1325Hz during REC/PB (SP) mode.
＊6. Four frequencies are output as synchronized with the rotation of t
f1=101.02kHz, f2=117.19kHz, f3=162.76kHz, f4=146.48kHz

VTR MODE						
PICTURE SEARCH		PB・PAUSE	SLOW	REVERSE SLOW	REC	REC PAUSE
UE	REVIEW					
2	* 2	* 1	* 1	* 1	* 9	H/L
H	H	H	H	H	L	L
3	* 3	* 3	* 3	* 3	L	L
L	L	L	L	L	H	L
H	H	H	H	H	L	H
4	* 4	* 4	* 4	* 4	* 4	* 4
H	H	H	H	H	L	L
5	* 5	* 5	—	—	H	H
6	* 6	* 6	* 6	* 6	H	* 6
7	* 7	* 7	* 7	* 7	* 7	* 7
8	* 8	H	* 8	* 8	L	L
H	H	H	H	H	L	L
V-cycle"Low"pulse						
V-cycle pulse rank						
V-cycle"Low"pulse rank						

the blank portion or at any drop out portion of tape.
gging detection input.
e synch signal input separated from line input video signal, camera video signal
ck video signal. (This signal has positive polarity).
ring shuttle editing from REC PAUSE, "High" while in any other mode.
es according to SP/LP switching. It becomes "High" when SP mode is entered
" when LP mode is entered.

4-9. MECHANICAL CONTROL — SERVO BLOCK INTERFACE (ST-48 BOARD)

Signal	Pin No.	I/O	VTR MODE												
			STOP	FF	REW	×2	−×2	PB	PICTURE SEARCH		PB・PAUSE	SLOW	REVERSE SLOW	REC	REC PAUSE
									CUE	REVIEW					
T.REEL FG	IC002 ⑰	I	—	* 1	* 1	* 1	* 1	* 1	* 1	* 1	—	* 1	* 1	* 1	—
S.REEL FG	IC002 ⑱	I	—	* 1	* 1	* 1	* 1	* 1	* 1	* 1	—	* 1	* 1	* 1	—
ATF ERROR	IC002 ⑪	I	—	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 2
DRUM PG	IC002 ⑧	I	—	* 3	* 3	* 3	* 3	* 3	* 3	* 3	* 3	* 3	* 3	* 3	* 3
DRUM FG	IC002 ⑨	I	—	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4
CAP FG/HMS CAP FG	IC002 ⑩ ⑦	I	—	* 5	* 5	* 5	* 5	* 5	* 5	* 5	—	* 5	* 5	* 5	—
CAP ON	IC002 ①	O	L	H	H	H	H	H	H	H	L	* 8	* 8	H	L
REF PILOT	IC002 ⑤	O	* 7	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6
RP PB MODE	IC002 ⑤	O	L	L	L	L	L	L	L	L	L	L	L	H	L
DRUM FWD/$\overline{\text{RVS}}$ * 11	IC002 ⑥	O	H	H	H	H	H	H	H	H	H	H	H	H	H
CAP FWD/$\overline{\text{RVS}}$	IC002 ②	O	L	H	L	H	L	H	H	L	L	* 8	* 9	H	L
DRUM ERR	IC002 ④	O	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10
CAP ERR	IC002 ⑤	O	L	* 10	* 10	* 10	* 10	* 10	* 10	* 10	L	* 10	* 10	* 10	L
DRUM ON * 12	IC002 ⑫	O	L	H	H	H	H	H	H	H	H	H	H	H	H

* 1. The amplitude modulated pulse is input by the rotation of the reel. (200msec period during REC/PB mode)
* 2. ATF error voltage input.
* 3. One PG pulse is input by one rotation of the drum. Approximately 25Hz.
* 4. Six FG pulses are input by one rotation of the drum. Approximately 150Hz.
* 5. 520 FG pulses are input by one rotation of the capstan. Approximately 1325Hz during REC/PB (SP) mode.
* 6. Four frequencies are output as synchronized with the rotation of the drum. f1 = 101.02kHz, f2 = 117.19kHz, f3 = 162.76kHz, f4 = 146.48kHz
* 7. f2 (117.19kHz) is output.
* 8. "High" pulse when tape is delivered.
* 9. "Low" pulse when tape is delivered.
* 10. PWM signal with a period of 21.5 μ sec.
* 11. Normally "High". Temporarily "Low" when a full top cassette is loaded (drum reverse rotation).
* 12. The "High" level is at approximately 1.3Vdc.

4-10. MECHANICAL CONTROL MICROPROCESSOR CXP80624 (ST-48 BOARD IC002) PIN DESCRIPTION PORT ALLOCATION

Pin No.	Signal	I/O	Function
1	DI CONT	O	Digital Analog Select Signal.
2	JOG VD	O	Pseudo VD signal to be inserted into playback video signal when speed change playback is performed.
3	LM7 WE	O	Digital write enable signal.
4	JOG	O	Speed change playback/normal playback select signal for the video circuit. "High" to select speed change playback.
5	$\overline{\text{RP PB MODE}}$	O	REC/PB select signal for REC/PB amplifier (RP-160 board IC001) and ATF servo IC (ST-48 board IC003). "High" to select REC mode.
6	$\overline{\text{FE ON}}$	O	Flying erase oscillation ON/OFF control signal. "Low" to activate the oscillation.
7	INT VD OUT	O	Timing reference for serial data communication. V-cycle "Low" pulse.
8	SP/$\overline{\text{LP}}$	O	SP/LP select signal. "Low" to select LP.
9	$\overline{\text{VIDEO CS}}$	O	Serial data communication chip select signal to the video IC. V-cycle "Low" pulse.
10	VA PB MODE	O	REC/PB select signal for the video circuit. "High" for PB mode.
11	MACRO DET	I	Not used.
12	10/7 SW	I	Not used.
13	$\overline{\text{EDIT}}$	O	Video circuit characteristic select signal.
14	VIRS	O	Teletex aria mask circuit.
15	ME/$\overline{\text{MP}}$ SW	I	ME/MP switch input. "Low" for MP, "High" for ME.
16	MP/HG SW	I	Not used.
17	REC PROOF SW	I	REC PROOF switch input. "High" for protected REC.
18	MODE SW 2	I	Mechanical deck MATRIX input.
19	MODE SW 1	I	Mechanical deck MATRIX input.
20	MODE SW 0	I	Mechanical deck MATRIX input.
21	CC DOWN SW	I	Cassette compartment clock switch input. "Low" for lock.
22	10/13 SW	I	Not used.
23	CAP GAIN UP	O	Capstan speed control signal ("High" during FF/REW mode).
24	LOAD	O	Loading motor control signal. "High" or "High" pulse output to allow loading.
25	UNLOAD	O	Loading motor control signal. "High" or "High" pulse output to allow unloading.
26	FL M LOAD	O	Front loading motor control signal. "High" or "High" pulse output to allow loading.
27	FL M UNLD	O	Front loading motor control signal. "High" or "High" pulse output to allow unloading.
28	$\overline{\text{LM7 CS}}$	O	Digital IC Chip Select Signal.
29	VI MUTE	O	Video mute signal.
30	AUDIO MUTE	O	Audio mute signal.
31	RAIN POS	O	Not used.
32	SAP	O	SAP select signal.
33	EURO S/V	O	EURO AV LINE OUT S/VIDEO Select Signal.
34	MIC ZOOM	O	Voice boost select signal. "Low" to turn on.
35	CNR ON	O	Not used.
36	HI8/$\overline{\text{NORMAL}}$	O	Hi8/$\overline{\text{NORMAL}}$ Select Signal (On play, Auto).
37	N.C.	—	Not used.
38	TOP END LED	O	ON/OFF signal for TAPE TOP/END LED.
39	MP	—	Connected to GND.
40	$\overline{\text{COSMO RESET}}$	I	Reset signal. "Low" to reset.
41	VSS	—	GND
42	XTAL	O	11.72MHz clock oscillation circuit.
43	EXTAL	I	

Pin No.	Signal	I/O	Function
44	$\overline{\text{COSMO CS}}$	I	Clip select signal from the mode control micromputer. V-cycle "Low" pulse.
45	SERIAL IN	I	Serial date input.
46	SERIAL OUT	O	Serial date output.
47	$\overline{\text{SCK}}$	O	Serial clock output.
48	ME/$\overline{\text{MP}}$	O	ME/MP select signal output. "Low" when MP Tape is used.
49	N. C.	—	GND
50	INSEL 1	O	Input select signal.
51	INSEL 2	O	Input select signal.
52	A VSS	—	GND
53	AVREF	—	Analog Port reference voltage. Connected to +5V.
54	AVDD	—	Analog Port power (+5V).
55	TOP SENS	I	Tape top sensing signal. This is normally "Low" and switches to "High" pulse input at tape top.
56	END SENS	I	Tape end sensing signal. This is normally "Low" and switches to "High" pulse input at tape end.
57	T REEL FG	I	T reel FG signal input.
58	S REEL FG	I	S reel FG signal input.
59	HI8 DET	I	Video Hi8 discrimination signal input.
60	AFM MODE DET	I	Audio multiplex discrimination output.
61	ATF ERROR	I	ATF error, ATF lock error input.
62	TH	I	Not used.
63	$\overline{\text{S SW 2}}$	I	S terminal switch detection input. "Low" for line 2 S terminal input.
64	$\overline{\text{S SW 1}}$	I	S terminal switch detection input. "Low" for line 1 S terminal input.
65	CLOG DET	I	This determines whether playback RF is present or not. "Low" under normal condition.
66	COMP SYNC	I	Composite sync signal separated form record/playback Y signal.
67	SP/$\overline{\text{LP}}$ DET	I	This determines which record mode the playback tape has when CUE/REVIEW/FF/REW mode is entered.
68	DRUM PG	I	Drum PG signal input. Used for the drum phase servo. 22.2msec periodic "High" pulse.
69	DRUM FG	I	Drum FG signal input. Used for the drum speed servo. 3.7msec periodic pulse.
70	CAP FG	I	Capstan FG signal input. Approximately 948Hz during REC/PB mode for the capstan speed servo.
71	N. C.	—	+5V power.
72	DRUM ON	O	Not used.
73	CAP ERR H	O	Not used.
74	DRUM ERR	O	Drum error signal output.
75	CAP ERR	O	Capstan error signal output. 20.15μsec PWM signal.
76	DRUM FWD/$\overline{\text{RVS}}$	O	Drum rotational direction control signal. Normally "High".
77	HMS CAP FG	O	Capstan FG signal input. Used tape counter.
78	N.C.	I	+5V power.
79	MPHG/$\overline{\text{MP}}$	O	Not used.
80	S/$\overline{\text{VIDEO}}$	O	Hi8/normal output signal.
81	ENV REQ	O	On JOG : RF Envelope on/off signal.
82	AFM OUTSEL	O	Main/sub select signal.
83	AFM MODE	O	Audio multiplex discrimination output.

Pin No.	
84	AUD
85	REF
86	N. C.
87	N. C.
88	VSS
89	VDD
90	VPP
91	CAP
92	CAP
93	DRU
94	DRU
95	PCM
96	PCM
97	FE R
98	PAL
99	RF S
100	VI S

• AFM stereo IC

Pin ㉝ (AFM M

• On E-E

AFM MOD
"H" : STELE
"L" : MONOR

• On Playback

AFM MOD
"H"
"M"
"L"

Pin ㉜ (AFM O

AFM OUT S
"H"
"M"
"L"

Pin No.	Signal	I/O	Function
44	COSMO CS	I	Clip select signal from the mode control micromputer. V-cycle "Low" pulse.
45	SERIAL IN	I	Serial date input.
46	SERIAL OUT	O	Serial date output.
47	SCK	O	Serial clock output.
48	ME/MP	O	ME/MP select signal output. "Low" when MP Tape is used.
49	N. C.	—	GND
50	INSEL 1	O	Input select signal.
51	INSEL 2	O	Input select signal.
52	A VSS	—	GND
53	AVREF	—	Analog Port reference voltage. Connected to +5V.
54	AVDD	—	Analog Port power (+5V).
55	TOP SENS	I	Tape top sensing signal. This is normally "Low" and switches to "High" pulse input at tape top.
56	END SENS	I	Tape end sensing signal. This is normally "Low" and switches to "High" pulse input at tape end.
57	T REEL FG	I	T reel FG signal input.
58	S REEL FG	I	S reel FG signal input.
59	HI8 DET	I	Video Hi8 discrimination signal input.
60	AFM MODE DET	I	Audio multiplex discrimination output.
61	ATF ERROR	I	ATF error, ATF lock error input.
62	TH	I	Not used.
63	S SW 2	I	S terminal switch detection input. "Low" for line 2 S terminal input.
64	S SW 1	I	S terminal switch detection input. "Low" for line 1 S terminal input.
65	CLOG DET	I	This determines whether playback RF is present or not. "Low" under normal condition.
66	COMP SYNC	I	Composite sync signal separated form record/playback Y signal.
67	SP/LP DET	I	This determines which record mode the playback tape has when CUE/REVIEW/FF/REW mode is entered.
68	DRUM PG	I	Drum PG signal input. Used for the drum phase servo. 22.2msec periodic "High" pulse.
69	DRUM FG	I	Drum FG signal input. Used for the drum speed servo. 3.7msec periodic pulse.
70	CAP FG	I	Capstan FG signal input. Approximately 948Hz during REC/PB mode for the capstan speed servo.
71	N. C.	—	+5V power.
72	DRUM ON	O	Not used.
73	CAP ERR H	O	Not used.
74	DRUM ERR	O	Drum error signal output.
75	CAP ERR	O	Capstan error signal output. 20.15μsec PWM signal.
76	DRUM FWD/RVS	O	Drum rotational direction control signal. Normally "High".
77	HMS CAP FG	O	Capstan FG signal input. Used tape counter.
78	N.C.	I	+5V power.
79	MPHG/MP	O	Not used.
80	S/VIDEO	O	Hi8/normal output signal.
81	ENV REQ	O	On JOG : RF Envelope on/off signal.
82	AFM OUTSEL	O	Main/sub select signal.
83	AFM MODE	O	Audio multiplex discrimination output.

Pin No.	Signal	I/O	Function
84	AUDIO PB	O	REC/PB select signal for the audio circuit. "High" for PB mode.
85	REF PILOT	O	Reference pilot signal for the ATF seruo. Four frequencies are selectively switched from one to another as synchronized with the rotation of the drum. f_1=101.02kHz, f_2=117.19kHz, f_3=162.76kHz, f_4=146.48kHz.
86	N. C.	—	N. C
87	N. C.	—	Connected to GND.
88	VSS	—	GND.
89	VDD	—	+5V power.
90	VPP	—	+5V power.
91	CAP ON	O	Capstan driver ON/OFF control signal. "High" to turn capstan ON.
92	CAP FWD/RVS	O	Capstan rotational direction control signal. "High" for FWD. "Low" for RVS.
93	DRUM ACCEL	O	Drum acceleration pulse.
94	DRUM BRAKE	O	Drum deceleration pulse.
95	PCM AFREC	O	Not used.
96	PCM REC INH	O	Not used.
97	FE RA	O	Not used.
98	PAL V	O	Burst insert timing pulse.
99	RF SWP	O	RF switching pulse signal. 30Hz, 50% duty pulse.
100	VI SWP	O	Not used.

● AFM stereo IC basic operation and LOGIC. (ST-48 BOARD IC002)

Pin ㉝ (AFM MODE)

• On E-E

AFM MODE	MATRIX ON/OFF	1.7MHz FM	BIL-ID 7dB AMP
"H" : STELEO	ON	ON	OFF
"L" : MONORAL	OFF	OFF	OFF

• On Playback

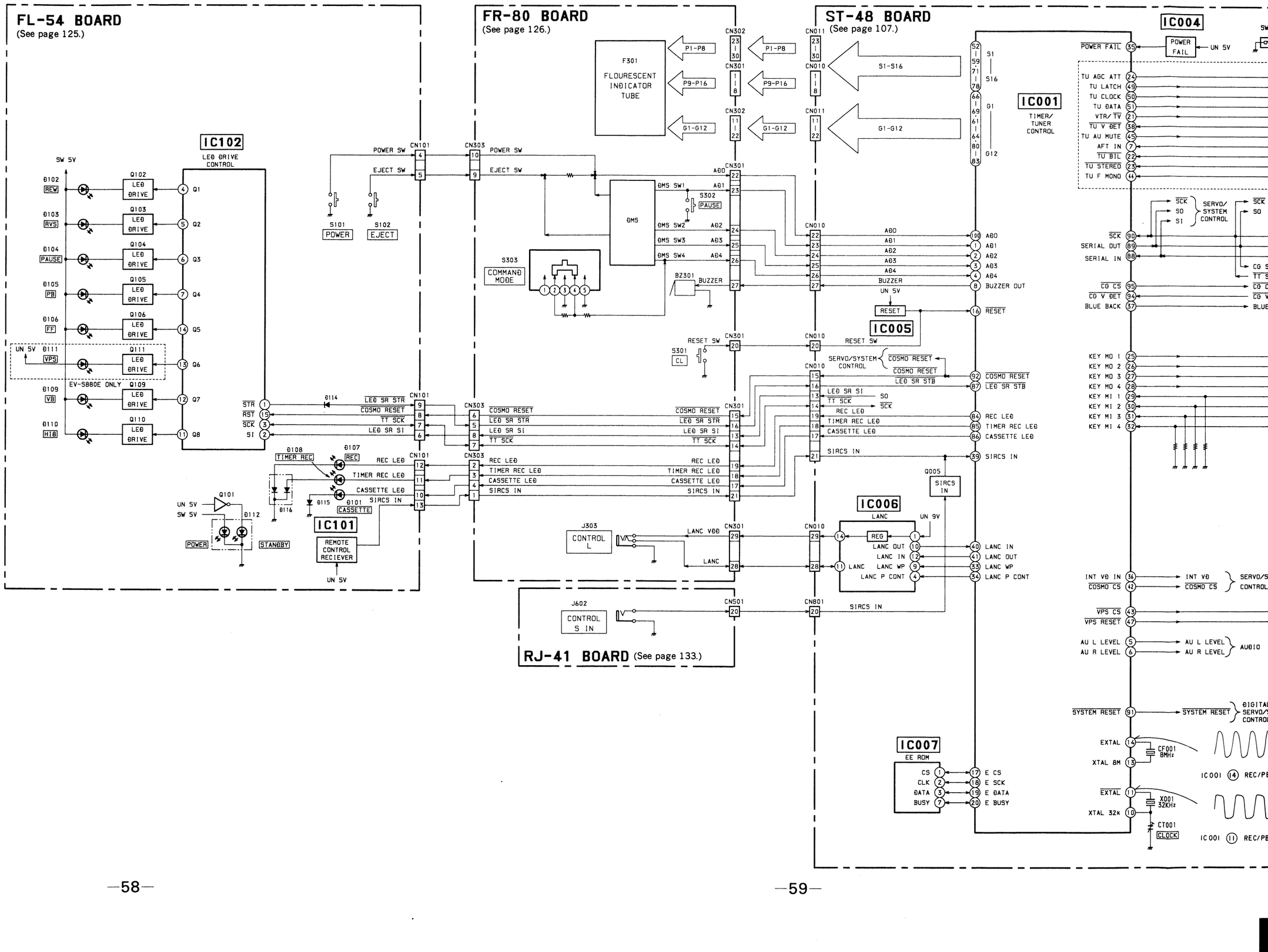
AFM MODE	AFM MODE
"H"	STELEO
"M"	AUDIO MULTIPLEX
"L"	MONORAL

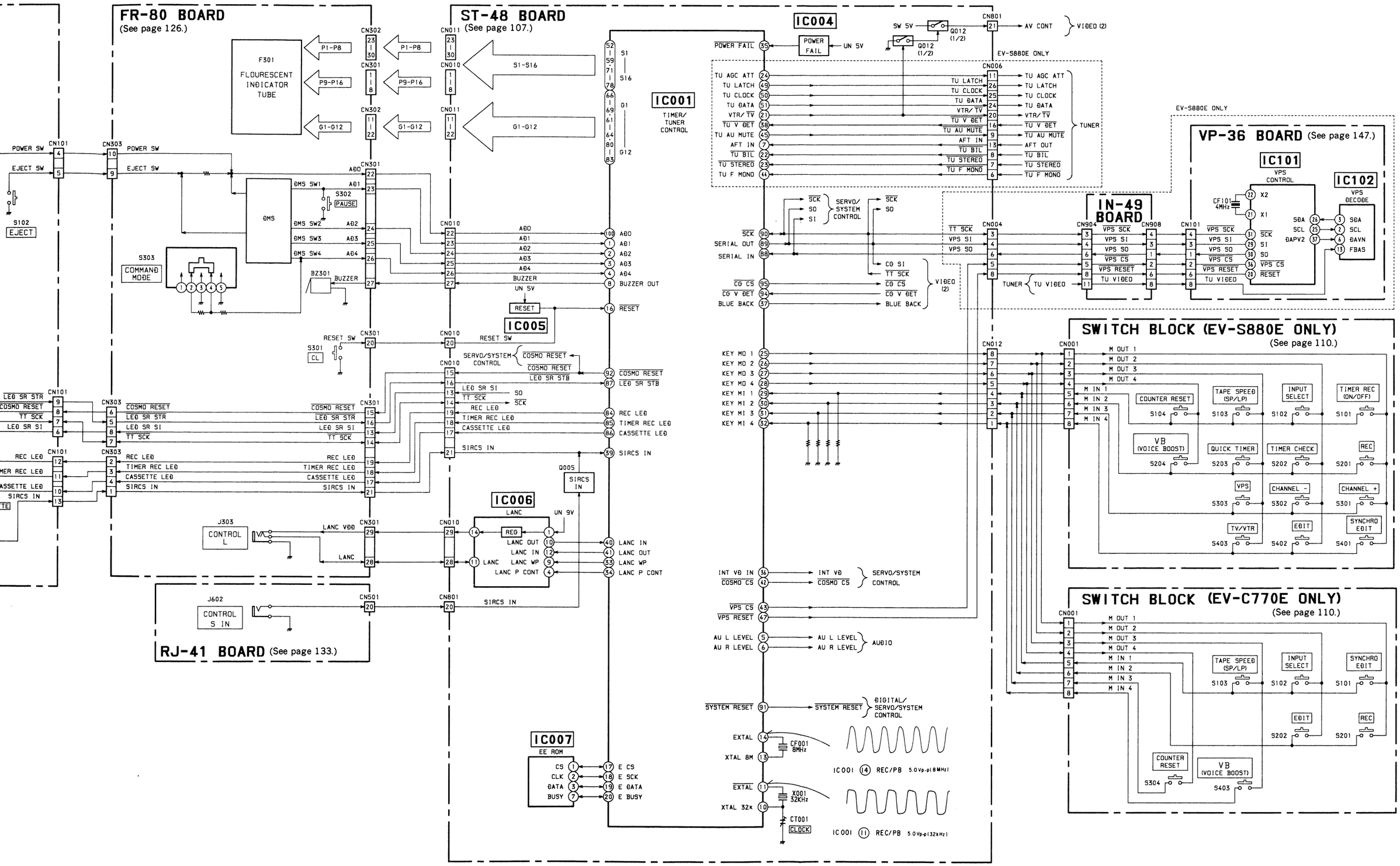
Pin ㉜ (AFM OUT SEL)

AFM OUT SEL	AUDIO MULTIPLEX
"H"	L/MAIN, MONORAL
"M"	R/SUB
"L"	STEREO/MAIN+SUB

4-11. TIMER, TUNER CONTROL BLOCK DIAGRAM

- The boards which signals only pass through may be omitted.




FR-80 BOARD
(See page 126.)
ST-48 BOARD
(See page 107.)
IC004
IC001
TIMER/ TUNER CONTROL
IC005
IC006
IC007
EE ROM
F301
FLOURESCENT INDICATOR TUBE
P1-P8
P9-P16
G1-G12
S1-S16
S1
S16
G1
G12
POWER SW
EJECT SW
S102
EJECT
ØMS
ØMS SW1
ØMS SW2
ØMS SW3
ØMS SW4
S302
PAUSE
S303
COMMAND MODE
BZ301
BUZZER
UN 5V
RESET
RESET SW
S301
CL
SERVO/SYSTEM CONTROL
COSMO RESET
LED SR STB
LED SR SI
TT SCK
SO
SCK
REC LED
TIMER REC LED
CASSETTE LED
SIRCS IN
Q005
SIRCS
LANC
UN 9V
REG
LANC VDD
LANC OUT
LANC IN
LANC WP
LANC P CONT
J303
CONTROL L
J602
CONTROL S IN
RJ-41 BOARD (See page 133.)
POWER FAIL
Q012 (1/2)
SW 5V
AV CONT
VIDEO (2)
EV-S880E ONLY
TU AGC ATT
TU LATCH
TU CLOCK
TU DATA
VTR/ TV
TU V DET
TU AU MUTE
AFT IN
TU BIL
TU STEREO
TU F MONO
TUNER
TU VIDEO
SERVO/ SYSTEM CONTROL
SERIAL OUT
SERIAL IN
CG SI
CG CS
CG V DET
BLUE BACK
VIDEO (2)
VP-36 BOARD (See page 147.)
IC101
VPS CONTROL
IC102
VPS DECODE
CF101 4MHz
X2
X1
VPS SCK
VPS SI
VPS SO
VPS CS
VPS RESET
SDA
SCL
DAPV2
DAVN
FBAS
IN-49 BOARD
KEY MO 1
KEY MO 2
KEY MO 3
KEY MO 4
KEY MI 1
KEY MI 2
KEY MI 3
KEY MI 4
INT VD IN
INT VD
COSMO CS
AU L LEVEL
AU R LEVEL
AUDIO
SYSTEM RESET
DIGITAL/ SERVO/SYSTEM CONTROL
EXTAL
XTAL 8M
CF001 8MHz
XTAL 32K
X001 32KHz
CT001
CLOCK
IC001 (14) REC/PB 5.0Vp-p(8MHz)
IC001 (11) REC/PB 5.0Vp-p(32kHz)
SWITCH BLOCK (EV-S880E ONLY)
(See page 110.)
M OUT 1
M OUT 2
M OUT 3
M OUT 4
M IN 1
M IN 2
M IN 3
M IN 4
COUNTER RESET
TAPE SPEED (SP/LP)
INPUT SELECT
TIMER REC (ON/OFF)
VB (VOICE BOOST)
QUICK TIMER
TIMER CHECK
REC
VPS
CHANNEL -
CHANNEL +
TV/VTR
EDIT
SYNCHRO EDIT
SWITCH BLOCK (EV-C770E ONLY)
(See page 110.)

4-12. TIMER/TUNER CONTROL MICROPROCESSOR MB89794B (ST-48 BOARD IC001)
PIN DESCRIPTION PORT ALLOCATION

Pin No.	Signal	I/O	Function
1	AD1	I	Key, DMS input.
2	AD2	I	Key, DMS input.
3	AD3	I	Key, DMS input.
4	AD4	I	Key, DMS input.
5	AU L LEVEL	I	Levelmeter display L CH audio input.
6	AU R LEVEL	I	Levelmeter display R CH audio input.
7	ANALOG AFT	I	On tuning, gets AFT UP or AFT DOWN by comparing st some level (with hysteresis).
8	BUZZER OUT	O	4096 kHz palse output for buzzer.
9	VCC	I	+5Vdc input.
10	CLOCK FOR CLOCK	I	Use for the standard clock by connecting the 32.768kHz crystal oscillator.
11	CLOCK FOR CLOCK	O	Use for the standard clock by connecting the 32.768kHz crystal oscillator.
12	5V	I	Connected to+5Vdc.
13	SYSTEM CLOCK	I	Use for the system clock by connecting the 8MHz crystal or ceramic oscillator.
14	SYSTEM CLOCK	I	Use for the system clock by connecting the 8MHz crystal or ceramic oscillator.
15	0V	VSS	Connected to 0Vdc.
16	$\overline{\text{RESET}}$	I	Micro-computer reset signal input.
17	$\overline{\text{EECS}}$	O	EEP ROM chip select signal.
18	$\overline{\text{EE SCK}}$	O	EEP ROM clock signal.
19	EE DATA	O	EEP ROM data signal.
20	EE BUSY	I	EEP ROM busy signal (transmission prohibition).
21	$\overline{\text{TV}}$/VTR	—	Antenna select control signal.
22	$\overline{\text{TU BIL}}$	I	Tuner bilingual input. Bilingual on "L".
23	$\overline{\text{TU STEREO}}$	I	Tuner stereo input. stereo on "L".
24	TU AC ATT	O	Auto preset.
25	KEY MO 1	O	Key matrix output.
26	KEY MO 2	O	Key matrix output.
27	KEY MO 3	O	Key matrix output.
28	KEY MO 4	O	Key matrix output.
29	KEY MI 1	I	Key matrix input.
30	KEY MI 2	I	Key matrix input.
31	KEY MI 3	I	Key matrix input.
32	KEY MI 4	I	Key matrix input.
33	LANCS WP	I	LANCS power control signal input.
34	LANCS P CONT	O	Power off and LANCS M on "Low" output.
35	$\overline{\text{POWER FAIL}}$	I	Electric power failure detection output. Normally "H", "L" on power failire.
36	INT VD	I	VD signal input from mechanical control microcomputer (ST-48 board IC002). Timing reference for serial data communication. V-cycle"Low" palse.
37	BLUE BACK	O	Blue back display on "H".
38	$\overline{\text{TU V DET}}$	I	SYNC DETECT input for tuning selected.

Pin No.	Signal	I/O	Function
39	SIRCS IN	I	W/L WD remote control input/SIRCS ENABLE output.
40	LANC IN	I	LANC input.
41	LANC OUT	O	LANC output.
42	$\overline{\text{COSMO CS}}$	O	Chip select signal output for ST-48 board IC002.
43	VPS CS	O	Chip select signal output for VPS IC
44	TU F MONO	O	Forced monochrome output (Set this output "H" for monochrome).
45	TU AU MUTE	O	Tuner, Audio MUTE signal output."H" during muting. Muting when channel select, input select, no signal and others.
46	TIMER ON LINE	O	Not used.
47	$\overline{\text{VPS RESET}}$	O	Reset signal output for VPS IC.
48	POWER ON	O	Power control output."H" when the power is on,"L" when the power is off.
49	LATCH	O	Tuner latch output.
50	CLOCK	O	Tuner Clock output.
51	DATA	O	Tuner data output.
52−59	FS00-07	O	FLO SEGMENT output. S1-S8
60	+5V		+5V
61−64	FC04-07	O	FLO GRID output. T5-T8
65	+5V		+5V
66−69	FC00-03	O	FLO GRID output. T1-T4
70	VSS		GND
71−78	FS08-15	O	FLO SEGMENT output. S9-S13
79	−30V		−30V
80−83	FC08-11	O	FLO GRID output. G9-G12.
84	REC LED	O	REC LED ligthing up on "H".
85	TIMER REC LED	O	TIMER REC LED lighting up on "H".
86	CASSETTE LED	O	CASSETTE IN LED lighting up on "H".
87	$\overline{\text{LED SR STR}}$	O	Latch signal of LED drige ceripara.
88	SI BUS	I	SI BUS data transmission line.
89	SO BUS	O	SO BUS data transmission line.
90	$\overline{\text{SCK}}$	I/O	S CLK data transmission line.
91	$\overline{\text{SYSTEM RESET}}$	O	System reset signal output.
92	$\overline{\text{COSMO RESET}}$	O	Reset signal output for ST-48 board IC002 Reset by "L".
93	————	—	Not used.
94	$\overline{\text{CG V DET}}$	I	$\overline{\text{V DET}}$ for the blue-back. $\overline{\text{V DET}}$ blue-back →"H",NORMAL →"L".
95	$\overline{\text{CG CS}}$	O	Chip select signal output for the character genetator.
96	RF CONT DA	—	Not used.
97	SHARPNESS DA	O	Sharpness adjustment analog voltage output.
98	0V		Ground terminal for analogue.
99	+5V		Power supply terminal for analogue.
100	AD0	I	Key,DMS input.

● A/D PORT

• The A/D po

AD0−AD4

AD 0	
AD 1	D
AD 2	D
AD 3	D
AD 4	D

• KEY MATR

MIN 1	
MIN 2	
MIN 3	C
MIN 4	SY

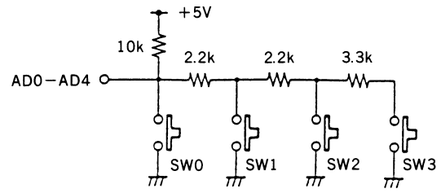
• KEY MATR

MIN 1	SY
MIN 2	
MIN 3	
MIN 4	

Pin No.	Signal	I/O	Function
39	SIRCS IN	I	W/L WD remote control input/SIRCS ENABLE output.
40	LANC IN	I	LANC input.
41	LANC OUT	O	LANC output.
42	$\overline{\text{COSMO CS}}$	O	Chip select signal output for ST-48 board IC002.
43	VPS CS	O	Chip select signal output for VPS IC
44	TU F MONO	O	Forced monochrome output (Set this output "H" for monochrome).
45	TU AU MUTE	O	Tuner, Audio MUTE signal output. "H" during muting. Muting when channel select, input select, no signal and others.
46	TIMER ON LINE	O	Not used.
47	$\overline{\text{VPS RESET}}$	O	Reset signal output for VPS IC.
48	POWER ON	O	Power control output. "H" when the power is on, "L" when the power is off.
49	LATCH	O	Tuner latch output.
50	CLOCK	O	Tuner Clock output.
51	DATA	O	Tuner data output.
52–59	FS00-07	O	FLO SEGMENT output. S1-S8
60	+5V		+5V
61–64	FC04-07	O	FLO GRID output. T5-T8
65	+5V		+5V
66–69	FC00-03	O	FLO GRID output. T1-T4
70	VSS		GND
71–78	FS08-15	O	FLO SEGMENT output. S9-S13
79	−30V		−30V
80–83	FC08-11	O	FLO GRID output. G9-G12.
84	REC LED	O	REC LED ligthing up on "H".
85	TIMER REC LED	O	TIMER REC LED lighting up on "H".
86	CASSETTE LED	O	CASSETTE IN LED lighting up on "H".
87	$\overline{\text{LED SR STR}}$	O	Latch signal of LED drige ceripara.
88	SI BUS	I	SI BUS data transmission line.
89	SO BUS	O	SO BUS data transmission line.
90	$\overline{\text{SCK}}$	I/O	S CLK data transmission line.
91	$\overline{\text{SYSTEM RESET}}$	O	System reset signal output.
92	$\overline{\text{COSMO RESET}}$	O	Reset signal output for ST-48 board IC002 Reset by "L".
93	———	—	Not used.
94	$\overline{\text{CG V DET}}$	I	$\overline{\text{V DET}}$ for the blue-back. $\overline{\text{V DET}}$ blue-back →"H", NORMAL →"L".
95	$\overline{\text{CG CS}}$	O	Chip select signal output for the character genetator.
96	RF CONT DA	—	Not used.
97	SHARPNESS DA	O	Sharpness adjustment analog voltage output.
98	0V		Ground terminal for analogue.
99	+5V		Power supply terminal for analogue.
100	AD0	I	Key, DMS input.

● A/D PORT ALLOCATION

• The A/D ports are allocate as shown below.



	SW 0	SW 1	SW 2	SW 3
AD 0	POWER	EJECT	STOP	PLAY
AD 1	DMS SW 1	PAUSE	——	——
AD 2	DMS SW 2	——	——	——
AD 3	DMS SW 3	——	——	——
AD 4	DMS SW 4	REMOCON MODE 1	REMOCON MODE 2	——

• KEY MATRIX (EV-S880E)

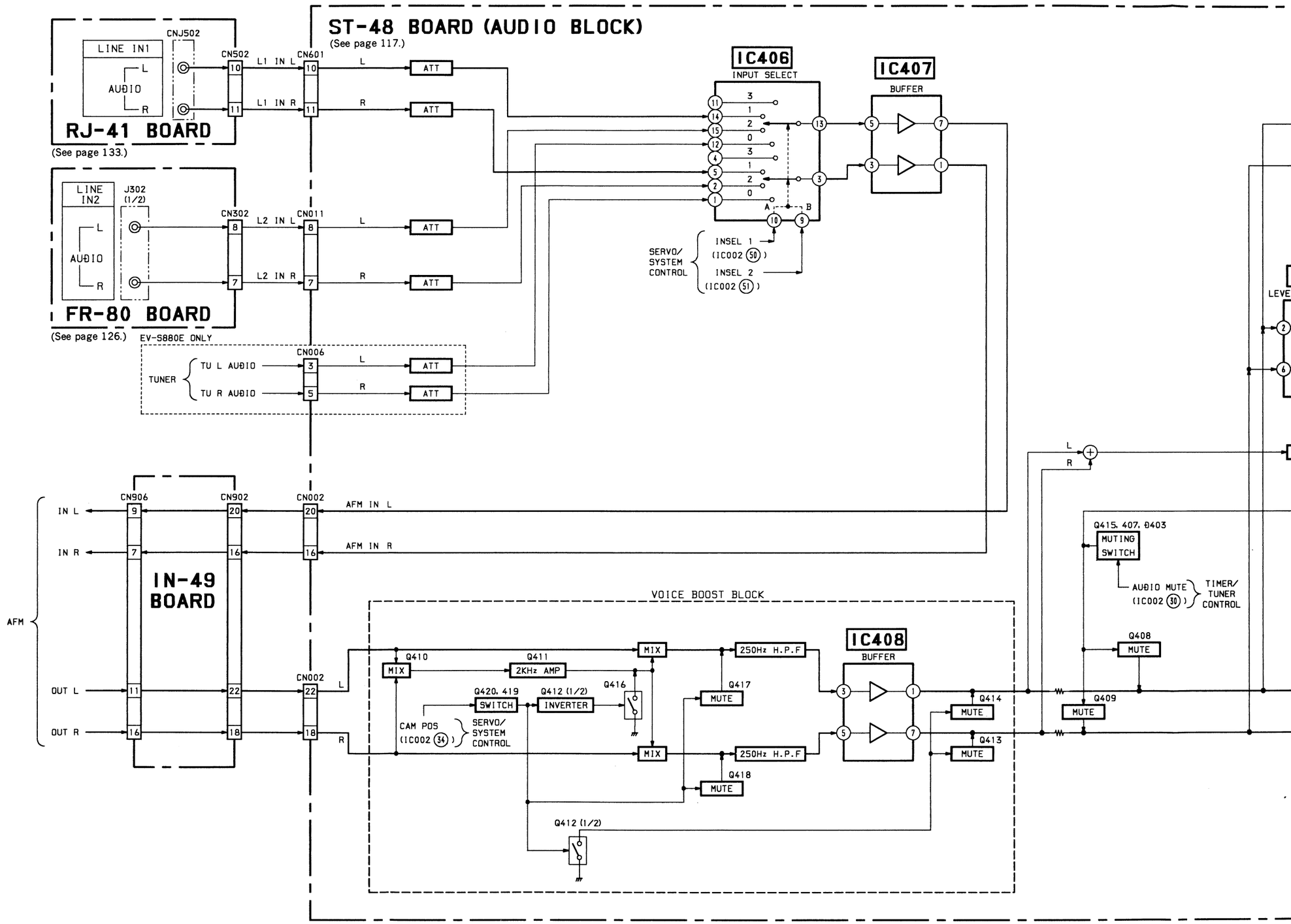
	MOUT 1	MOUT 2	MOUT 3	MOUT 4
MIN 1	TIMER REC	INPUT SELECT	TAPE SPEED (SP/LP)	COUNTER RESET
MIN 2	REC	QUICK TIMER	——	VB (VOICE BOOST)
MIN 3	CHANNEL +	CHANNEL −	VPS ON/OFF	——
MIN 4	SYNCHRO EDIT	EDIT	TV/VTR	——

• KEY MATRIX (EV-C770E)

	MOUT 1	MOUT 2	MOUT 3	MOUT 4
MIN 1	SYNCHRO EDIT	INPUT SELECT	TAPE SPEED (SP/LP)	——
MIN 2	REC	EDIT	——	——
MIN 3	——	——	——	COUNTER RESET
MIN 4	——	——	VB (VOICE BOOST)	——

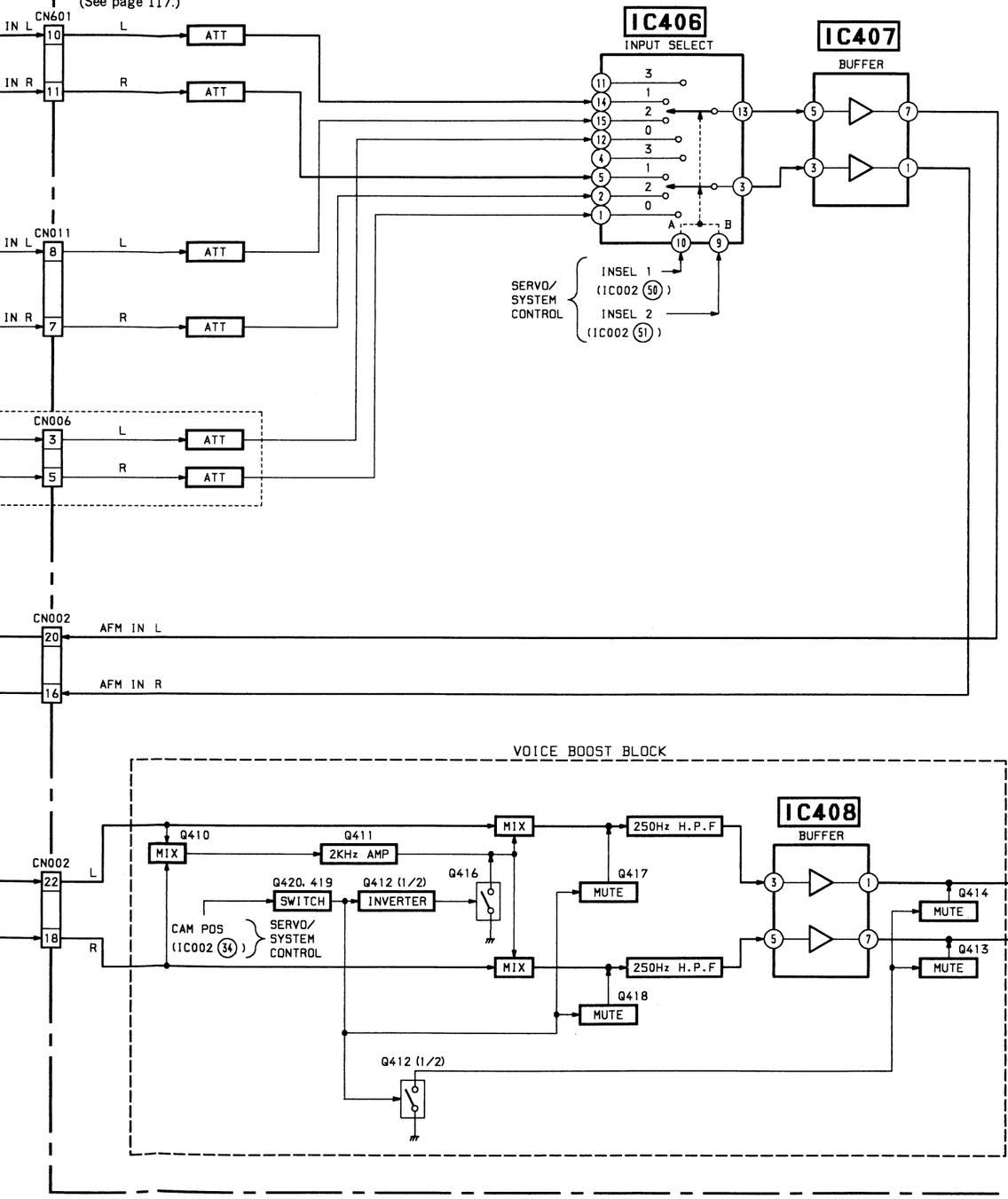
4-13. AUDIO BLOCK DIAGRAM

● The boards which signals only pass through may be omitted.



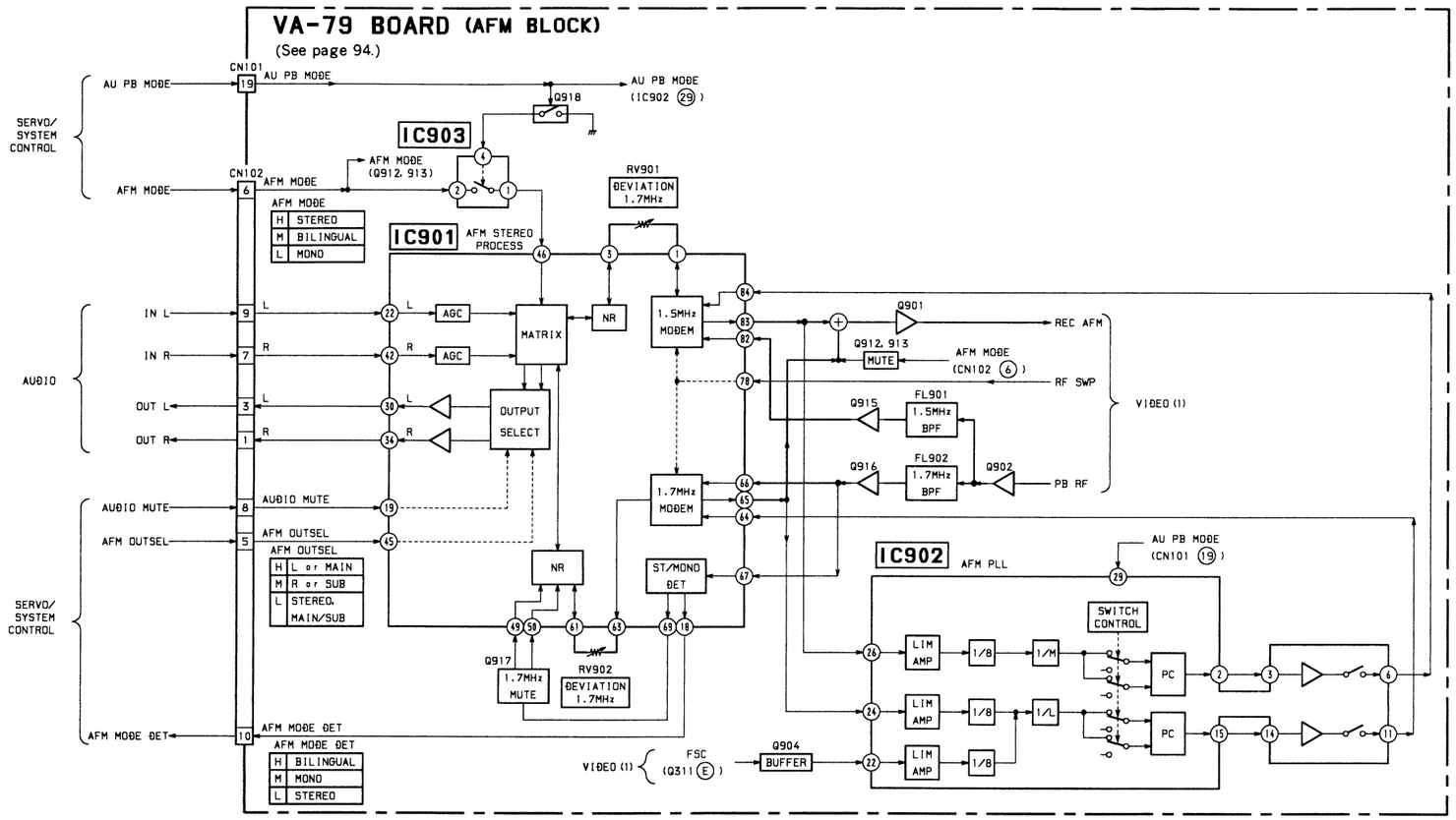
ST-48 BOARD (AUDIO BLOCK)

(See page 117.)



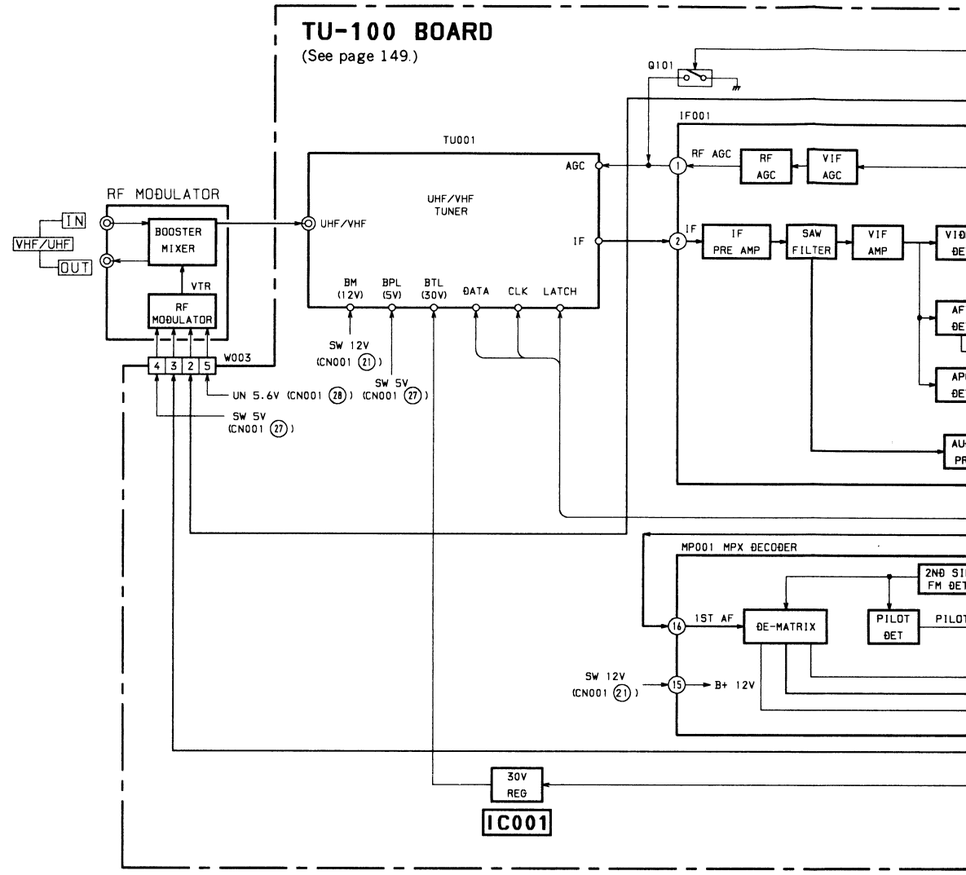
4-14. AFM BLOCK DIAGRAM

● The boards which signals only pass through may be omitted.



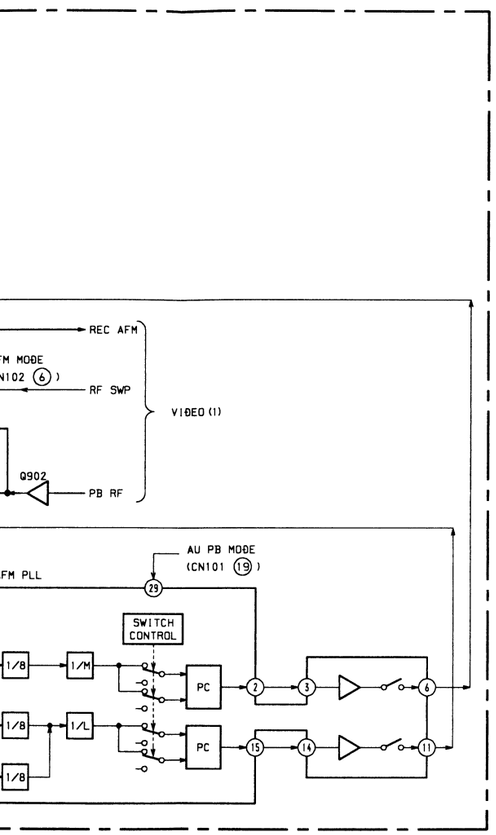
4-15. TUNER BLOCK DIAGRAM (EV-S880E only)

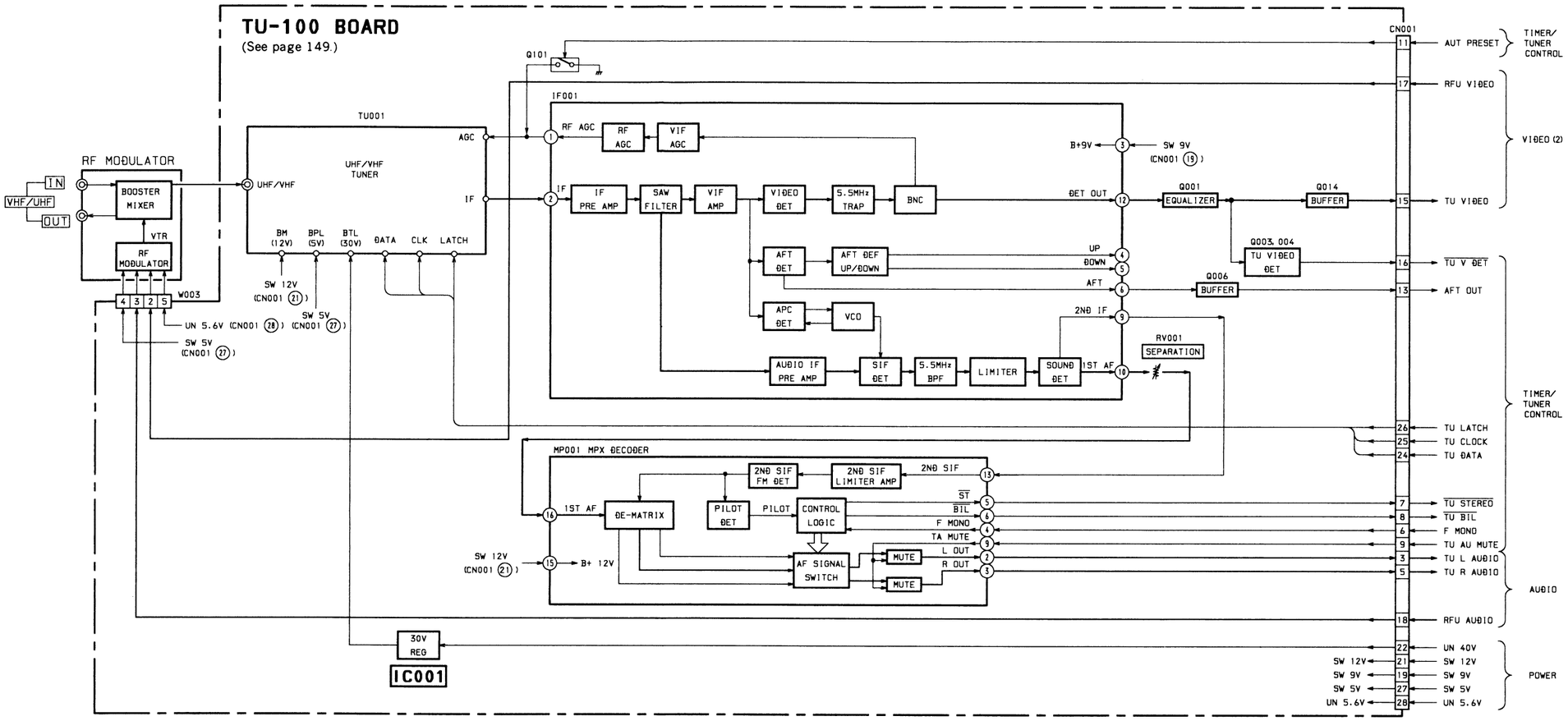
● The boards which signals only pass through may be omitted.



4-15. TUNER BLOCK DIAGRAM (EV-S880E only)

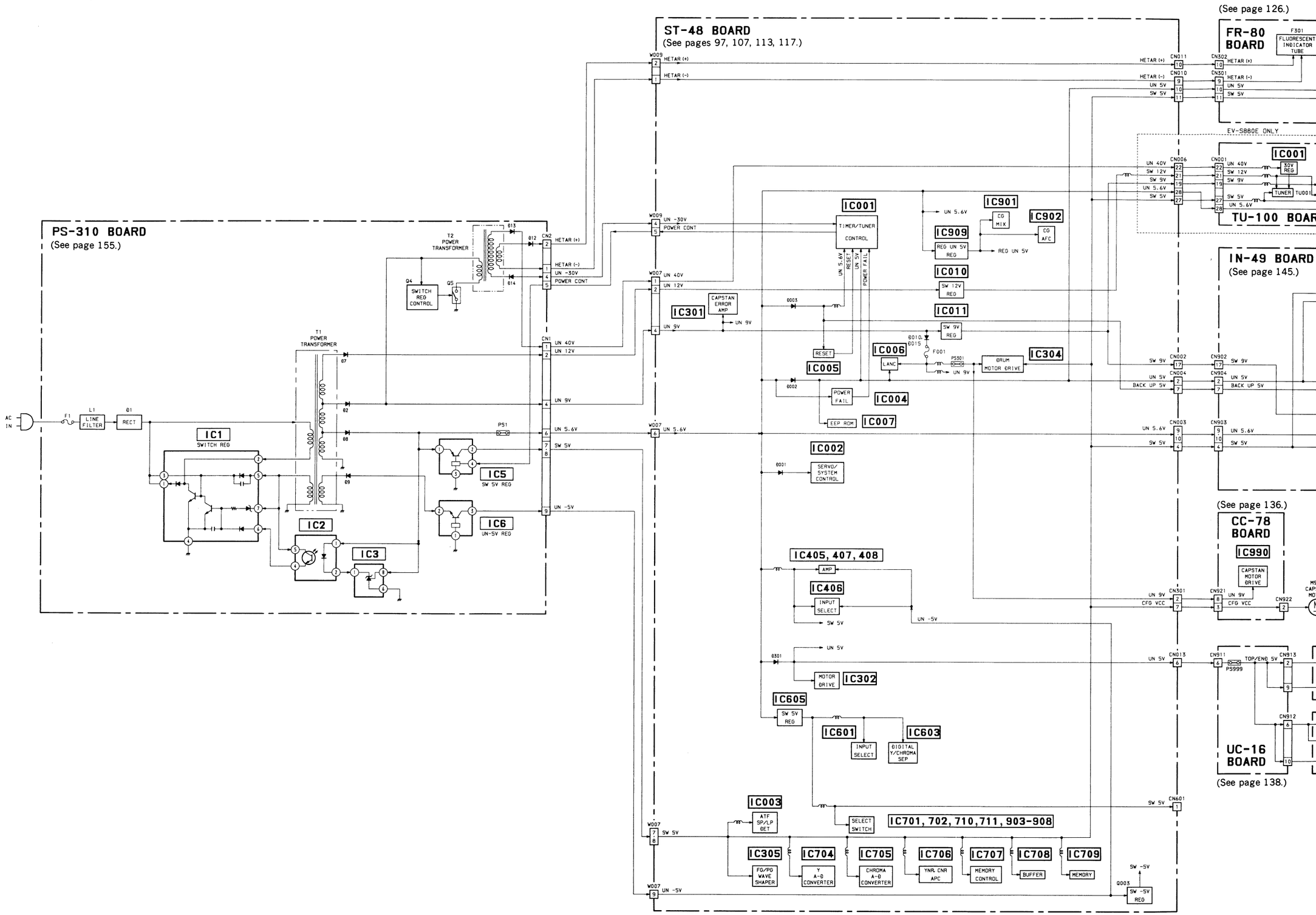
- The boards which signals only pass through may be omitted.

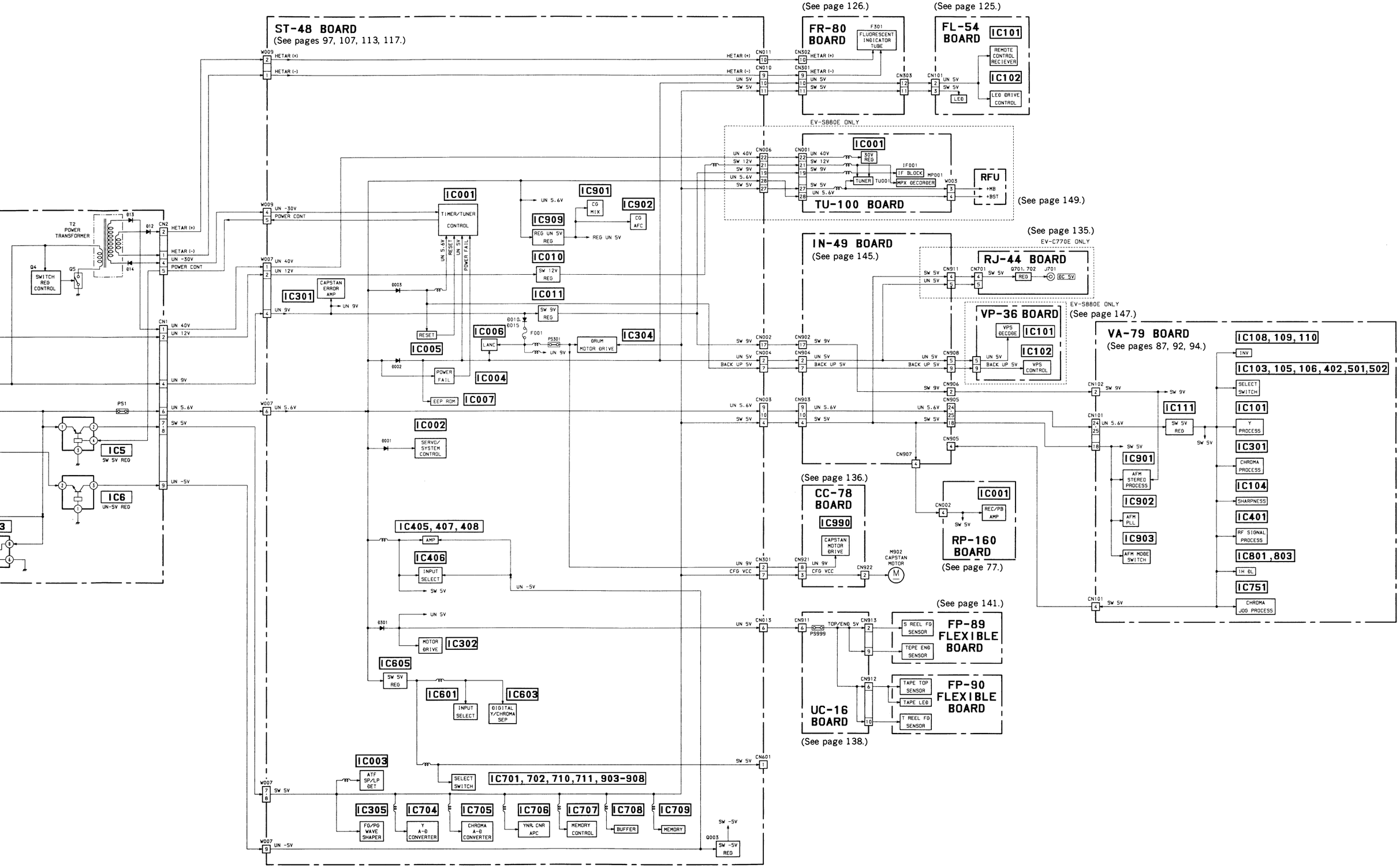




4-16. POWER BLOCK DIAGRAM

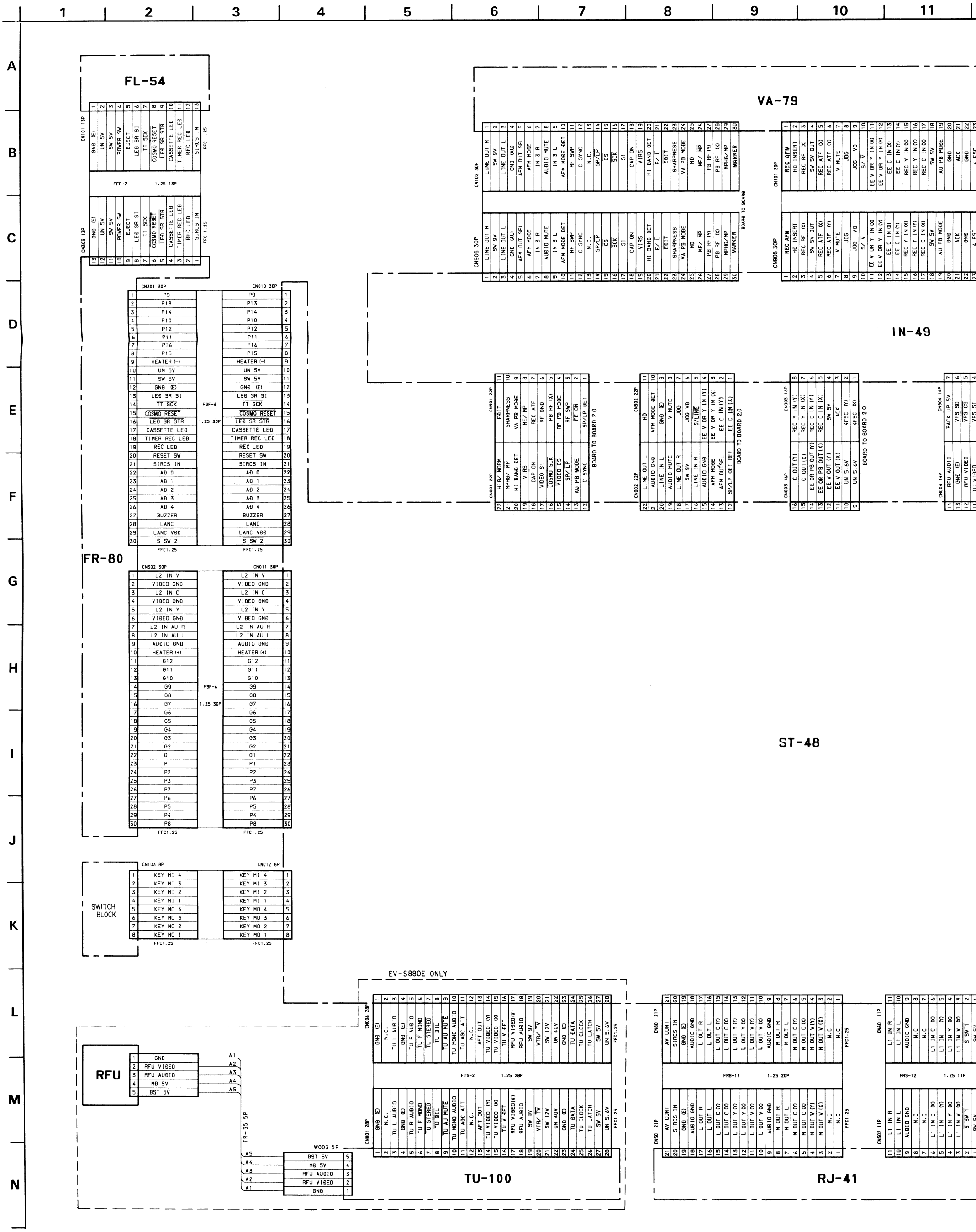
● The boards which signals only pass through may be omitted.




ST-48 BOARD
(See pages 97, 107, 113, 117.)
(See page 126.)
(See page 125.)
FR-80 BOARD
F301
FLUORESCENT INDICATOR TUBE
FL-54 BOARD
IC101
REMOTE CONTROL RECIEVER
IC102
LED DRIVE CONTROL
LED
EV-S880E ONLY
IC001
3.0V REG
IFD01
IF BLOCK
MPD01
MPX DECORDER
TUNER
TU001
W003
RFU
+MB
+BST
TU-100 BOARD
(See page 149.)
(See page 135.)
EV-C770E ONLY
RJ-44 BOARD
Q701, 702
REG
J701
DC 5V
IN-49 BOARD
(See page 145.)
VP-36 BOARD
VPS DECODE
IC101
IC102
VPS CONTROL
EV-S880E ONLY
(See page 147.)
VA-79 BOARD
(See pages 87, 92, 94.)
IC108, 109, 110
INV
IC103, 105, 106, 402, 501, 502
SELECT SWITCH
IC101
Y PROCESS
IC301
CHROMA PROCESS
IC104
SHARPNESS
IC401
RF SIGNAL PROCESS
IC801, 803
1H DL
IC751
CHROMA JOG PROCESS
IC901
AFM STEREO PROCESS
IC902
AFM PLL
IC903
AFM MODE SWITCH
IC111
SW 5V REG
T2 POWER TRANSFORMER
D13
D12
D14
Q4
SWITCH REG CONTROL
Q5
PS1
IC5
SW 5V REG
IC6
UN -5V REG
IC001
TIMER/TUNER CONTROL
IC901
CG MIX
IC902
CG AFC
IC909
REG UN 5V REG
REG UN 5V
IC010
SW 12V REG
IC011
SW 9V REG
IC301
CAPSTAN ERROR AMP
IC006
LANC
D010, D015
F001
PS301
IC304
DRUM MOTOR DRIVE
IC005
POWER FAIL
IC004
EEP ROM
IC007
IC002
SERVO/ SYSTEM CONTROL
IC405, 407, 408
AMP
IC406
INPUT SELECT
IC302
MOTOR DRIVE
IC605
SW 5V REG
IC601
INPUT SELECT
IC603
DIGITAL Y/CHROMA SEP
IC003
ATF SP/LP DET
SELECT SWITCH
IC701, 702, 710, 711, 903-908
IC305
FG/PG WAVE SHAPER
IC704
Y A-D CONVERTER
IC705
CHROMA A-D CONVERTER
IC706
YNR CNR APC
IC707
MEMORY CONTROL
IC708
BUFFER
IC709
MEMORY
Q003
SW -5V REG
(See page 136.)
CC-78 BOARD
IC990
CAPSTAN MOTOR DRIVE
M902 CAPSTAN MOTOR
RP-160 BOARD
(See page 77.)
IC001
REC/PB AMP
(See page 141.)
FP-89 FLEXIBLE BOARD
S REEL FG SENSOR
TAPE END SENSOR
FP-90 FLEXIBLE BOARD
TAPE TOP SENSOR
TAPE LED
T REEL FG SENSOR
UC-16 BOARD
(See page 138.)
P5999
HETAR (+)
HETAR (-)
UN -30V
POWER CONT
UN 40V
UN 12V
UN 9V
UN 5.6V
SW 5V
UN -5V
SW -5V
BACK UP 5V
CFG VCC
RESET
POWER FAIL
TOP/END 5V

SECTION 5
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

5-1. FRAME SCHEMATIC DIAGRAM



10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20

EV-S880E ONLY

EV-C770E ONLY

VP-36

RJ-44

CHECK PIN

CN910 3P: REF, DET, GND (E)

CN908 10P: VPS SO, VPS CS, VPS SI, VPS SCK, UN 5V, VPS RESET, GND (E), TU VIDEO(X), BACK UP 5V, N.C. — BOARD TO BOARD 2.0

CN911 5P: GND, RFU VIDEO, RFU AUDIO, SW 5V, UN 5V

CN907 10P: V GND, REC RF, PB RF, SW 5V, RP PB MODE, RF SWP, H CEG, ME/ MP, FE ON, N.C. — FFC 1.25

FR1-1, 1.25 10P

CN002 10P: V GND, REC RF, PB RF, SW 5V, RP PB MODE, RF SWP, H CHG, ME/ MP, FE ON, N.C. — FFC 1.25

RP-160

CN001 8P: GND, RF SWP, PB Y, PB PCM RF, 2 CH, 1 CH, REC CURRENT, 1*CH

CN003 13P: GND, FE (X), FE (Y), FE (G), 1*CH (Y), 1*CH (X), 1*CH (G), 2CH (X), 2CH (Y), 2CH (G), 1CH (Y), 1CH (X), 1CH (G)

FP-471, 1.0 13P

CN004 14P: RFU AUDIO, GND (E), RFU VIDEO, TU VIDEO, GND (E), N.C., VPS RESET, BACK UP 5V, VPS SO, VPS CS, VPS SI, VPS SCK, UN 5V, GND (G)

BOARD TO BOARD 2.0

IN-49

CN931 10P: GND, PG (+), PG (COM), FG (+), FG (COM), GND, DRM COM, DRM W, DRM V, DRM U

FP-472, 1.0 10P

M901 DRUM MOTOR

CN934 2P: LD LOAD, LD UNLD — LD1, LD2

M903 LOADING MOTOR

CN933 2P: FL LOAD, FL UNLD — FL1, FL2

M904 FRONT LOADING MOTOR

CN302 14P: FL LOAD, FL UNLOAD, LD LOAD, LD UNLOAD, GND, PG (+), PG (COM), FG (+), FG (COM), GND, DRUM COM, DRM W, DRM V, DRM U — FFC1.25

F05-1, 1.25 14P

CN932 14P: FL LOAD, FL UNLOAD, LD LOAD, LD UNLOAD, GND, PG (+), PG (COM), FG (+), FG (COM), GND, DRUM COM, DRM W, DRM V, DRM U

DC-53

MD BLOCK

CN922 15P: WHE (-), WHE (+), CAP V, UHE (-), UHE (+), HE VCC, VHE (-), VHE (+), HE GND, CAP U, CAP W, CFG (A), CFG (B), CFG VCC, CFG GND

M902 CAPSTAN MOTOR

CN301 9P: GND (M), UN 9V, CAP VS, CAP FWD, CAP ON, CFG GND, CFG VCC, CFG (B), CFG (A) — FFC 1.25

FC5-2, 1.25 9P

CN921 9P: GND (M), UN 9V, CAP VS, CAP FWD, CAP ON, CFG GND, CFG VCC, CFG (B), CFG (A) — FFC 1.25

CC-78

CN912 11P: COM, ME/MP, MP/ HG, REC PROOF, TOP END LED, 5V, TOP SENS, T REEL LED, T REEL FG, 5V, T REEL LED

MD FLEXIBLE

FP-90 FLEXIBLE BOARD

CN913 13P: S REEL LED, 5V, S REEL FG, MODE SW 2, MODE SW 1, MODE SW 0, COM, CC DOWN, 5V, END SENS, 13/10, COM, 7/10

MD FLEXIBLE

FP-89 FLEXIBLE BOARD

CN013 16P: COM, ME/MP, MP/ HG, REC PROOF, TOP END LED, UN 5V, TOP SENS, S REEL FG, T REEL FG, MODE SW 2, MODE SW 1, MODE SW 0, CC DOWN SW, END SENS, 13/10, 7/10

FUS-1, 1.0 16P

CN911 16P: COM, ME/MP, MP/ HG, REC PROOF, TOP END LED, UN 5V, TOP SENS, S REEL FG, T REEL FG, MODE SW 2, MODE SW 1, MODE SW 0, CC DOWN SW, END SENS, 13/10, 7/10

UC-16

CN004 14P: RFU AUDIO, GND (E), RFU VIDEO, TU VIDEO, GND (E), N.C., VPS RESET, BACK UP 5V, VPS SO, VPS CS, VPS SI, VPS SCK, UN 5V, GND (G)

BOARD TO BOARD 2.0

CN601 11P: L1 IN R, L1 IN L, AUDIO GND, N.C, N.C, L1 IN C (X), L1 IN (Y), L1 IN Y (X), L1 IN V (X), S SW 1, SW 5V — FFC1.25

FR5-12, 1.25 11P

CN502 11P: L1 IN R, L1 IN L, AUDIO GND, N.C, N.C, L1 IN C (X), L1 IN (Y), L1 IN Y (X), L1 IN V (X), S SW 1, SW 5V — FFC1.25

RJ-41

W007 12P: GND (E), GND (E), N.C, UN-5V, SW5V, SW5V, UN5.6V, GND (M), UN 11V, N.C, UN12V, UN40V

8P-63, 2.5 12P

CN1 12P: GND (E), GND (E), N.C, UN-5V, SW5V, SW5V, UN5.6V, GND (M), UN 11V, N.C, UN12V, UN40V

W009 5P: POWER CONT, UN-30V, GND (E), HEATER (+), HEATER (-)

SP-122, 2.0 5P

CN2 5P: POWER CONT, UN-30V, GND (E), HEATER (+), HRATER (-)

PS-310

5-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

• THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is is printed in each block.)

● For printed wiring boards.

- : Pattern from the side which enables seeing.
- : Pattern of the rear side.
- Circled numbers refer to waveforms.

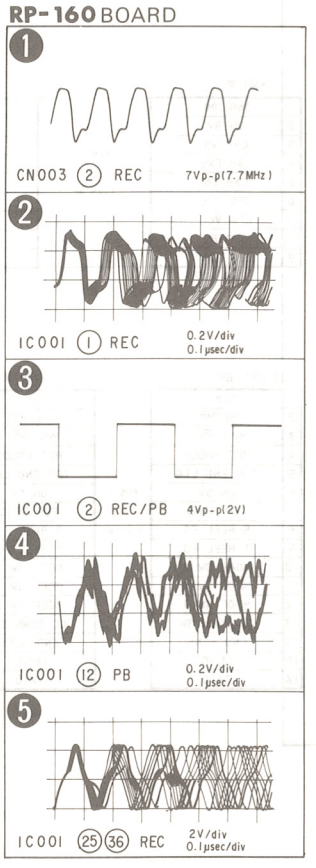
● For schematic diagram.

- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4W unless otherwise noted.
- Chip resistor are 1/8W or 1/10W unless otherwise noted.
  kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF : μμF.
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : nonflammable resistor.
- : fusible resistor.
- : panel designation.
- △ : internal component.
- : adjustment for repair.
- : B + Line.
- : B − Line.
- : IN/OUT direction of (+, −) B line.
- Circled numbers refer to waveforms.
- Voltages are dc between ground and measurement points.
- Readings are taken with a color-bar signal input.
- Readings are taken with a digital multimeter (DC10MΩ).
- Voltage variations may be noted due to normal production tolerances.

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

RP-160 BOARD



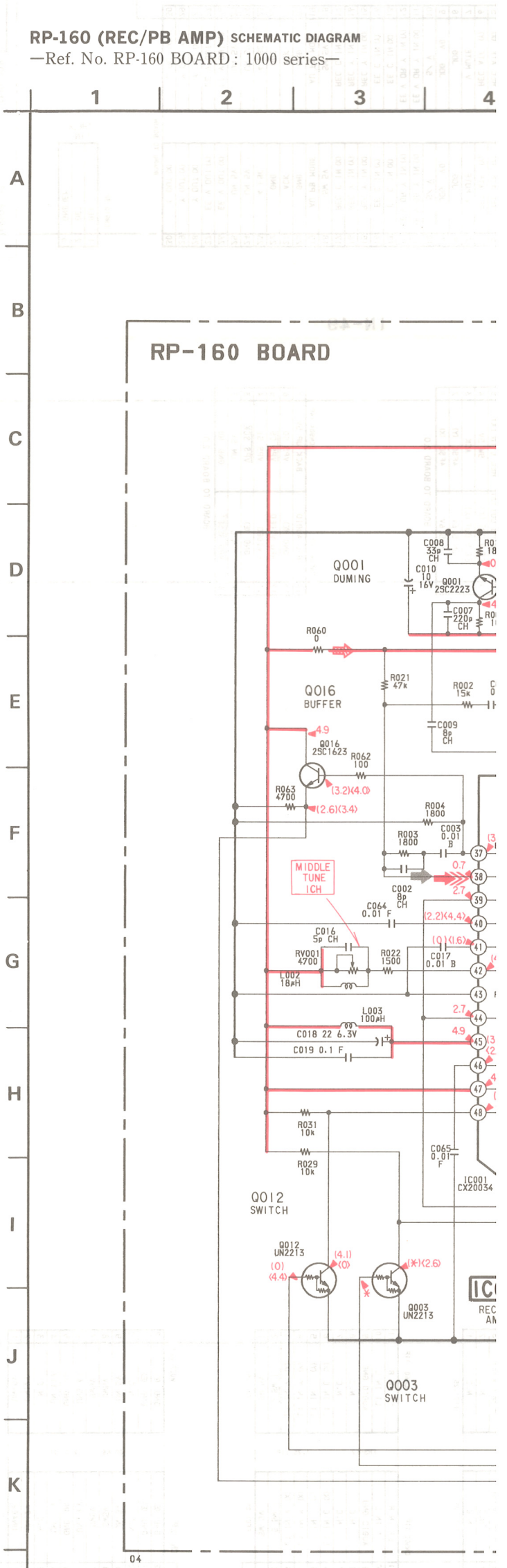
• Signal path

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	⇨	⇨	⇨	⇨

• Signal path

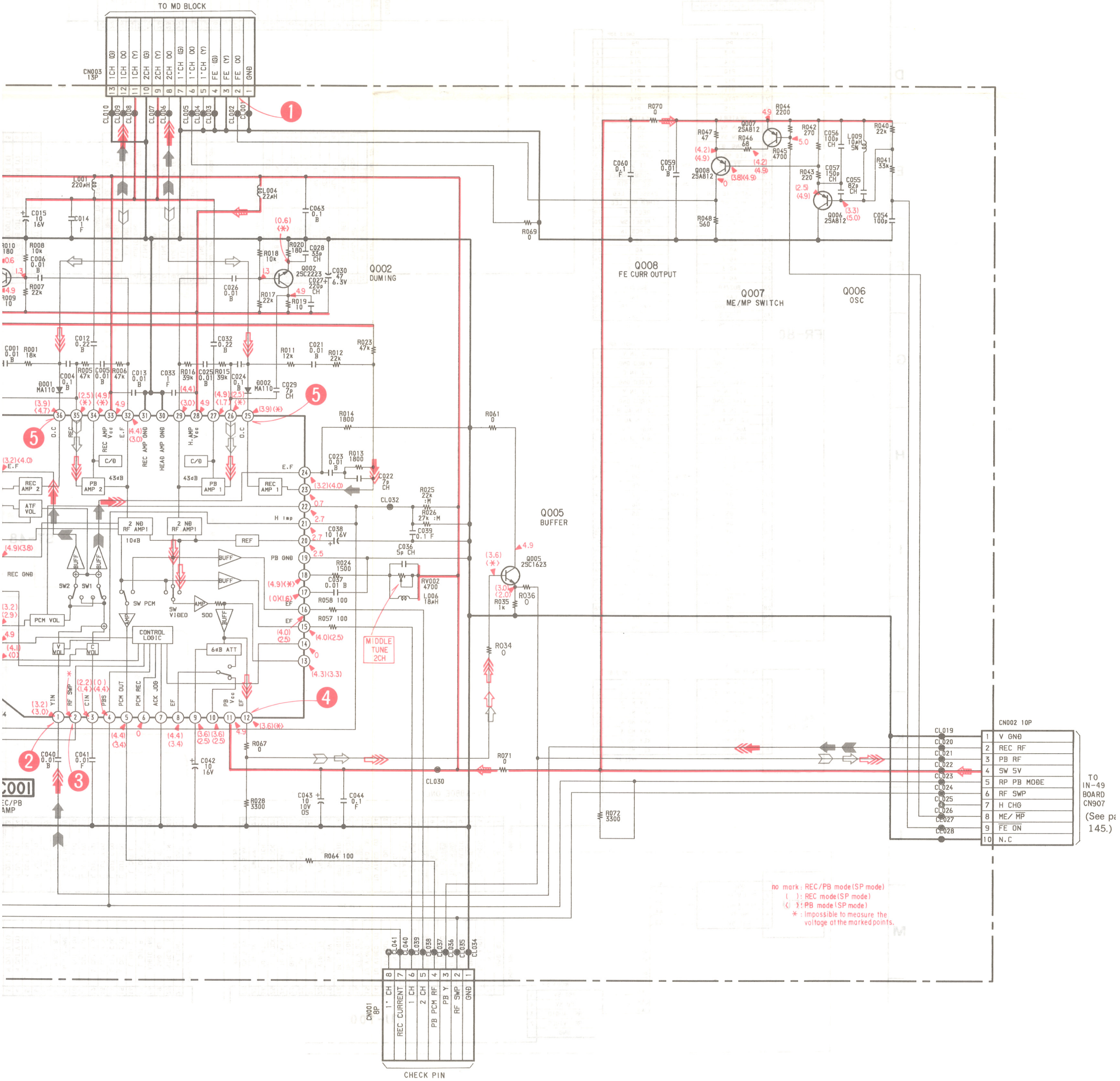
	REC	REC/PB	PB
Ref.signal	▰	▰	▱

RP-160 (REC/PB AMP) SCHEMATIC DIAGRAM
—Ref. No. RP-160 BOARD : 1000 series—



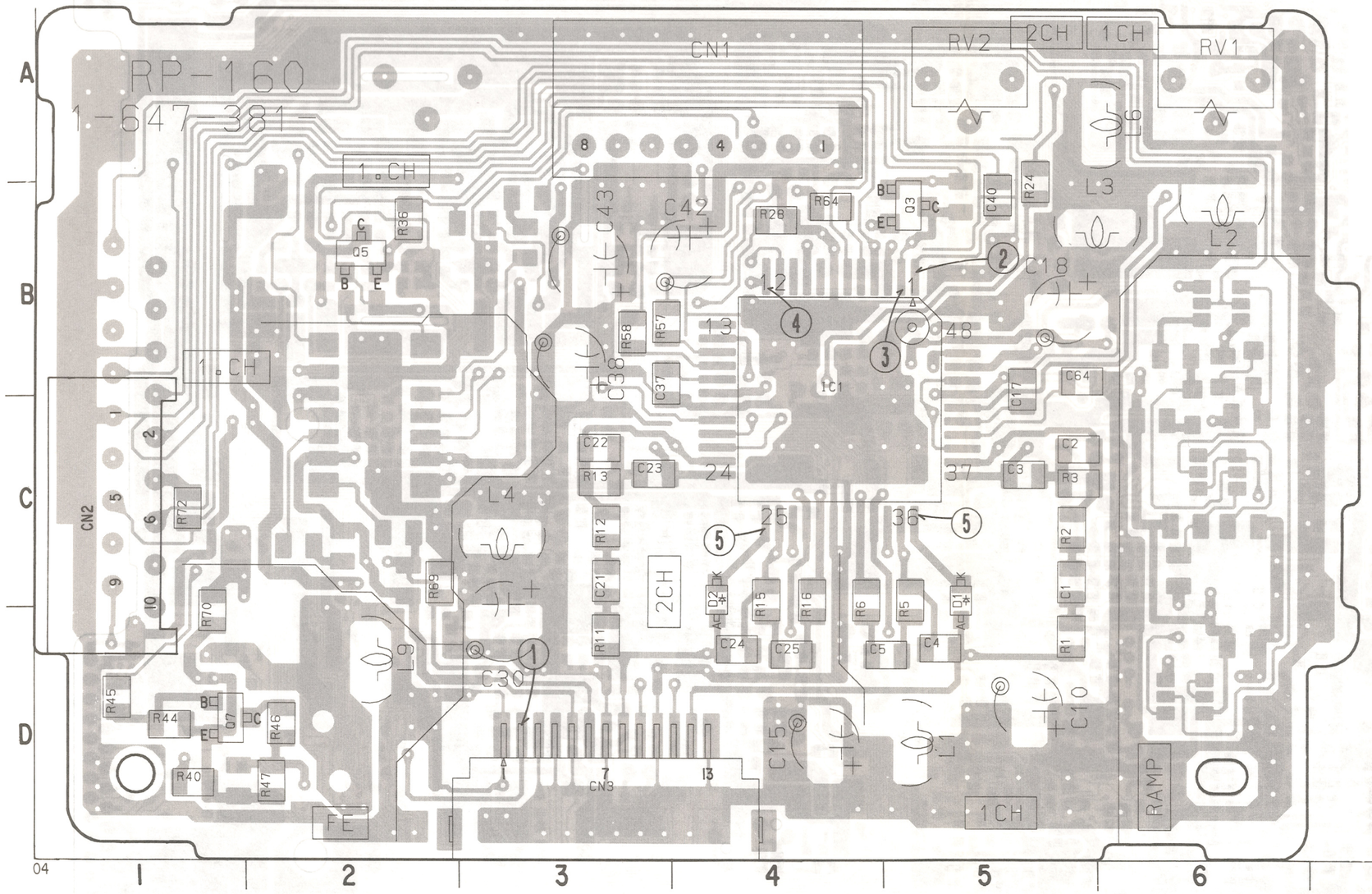
4 5 6 7 8 9 10 11 12 13 14

(See page 137.)



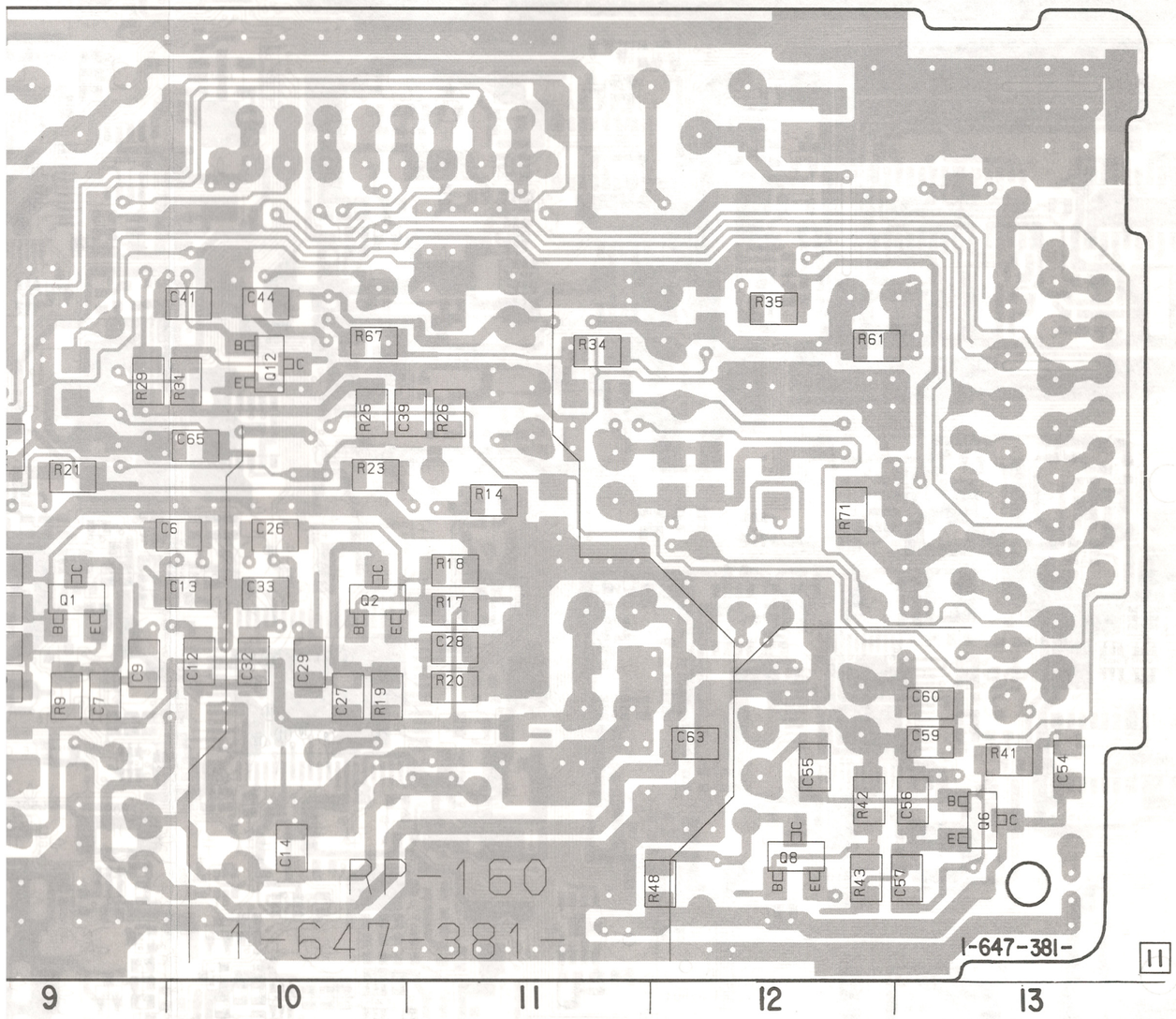
RP-160 (REC/PB AMP) PRINTED WIRING BOARD
—Ref. No. RP-160 BOARD : 1000 series—

RP-160 BOARD (COMPONENT SIDE)



RP-160 BOARD (CONDUCTOR SIDE)

UCTOR SIDE)



RP-160 BOARD

D001	C-5
D002	C-4
IC001	B-4
Q001	C-9
Q002	C-10
Q003	A-3
Q005	B-2
Q006	D-13
Q007	D-1
Q008	D-12
Q012	B-10
Q016	B-9

< DIODE >

D001	8-719-404-46 MA110
D002	8-719-404-46 MA110

< IC >

IC001	8-752-003-44 CX20034

< TRANSISTOR >

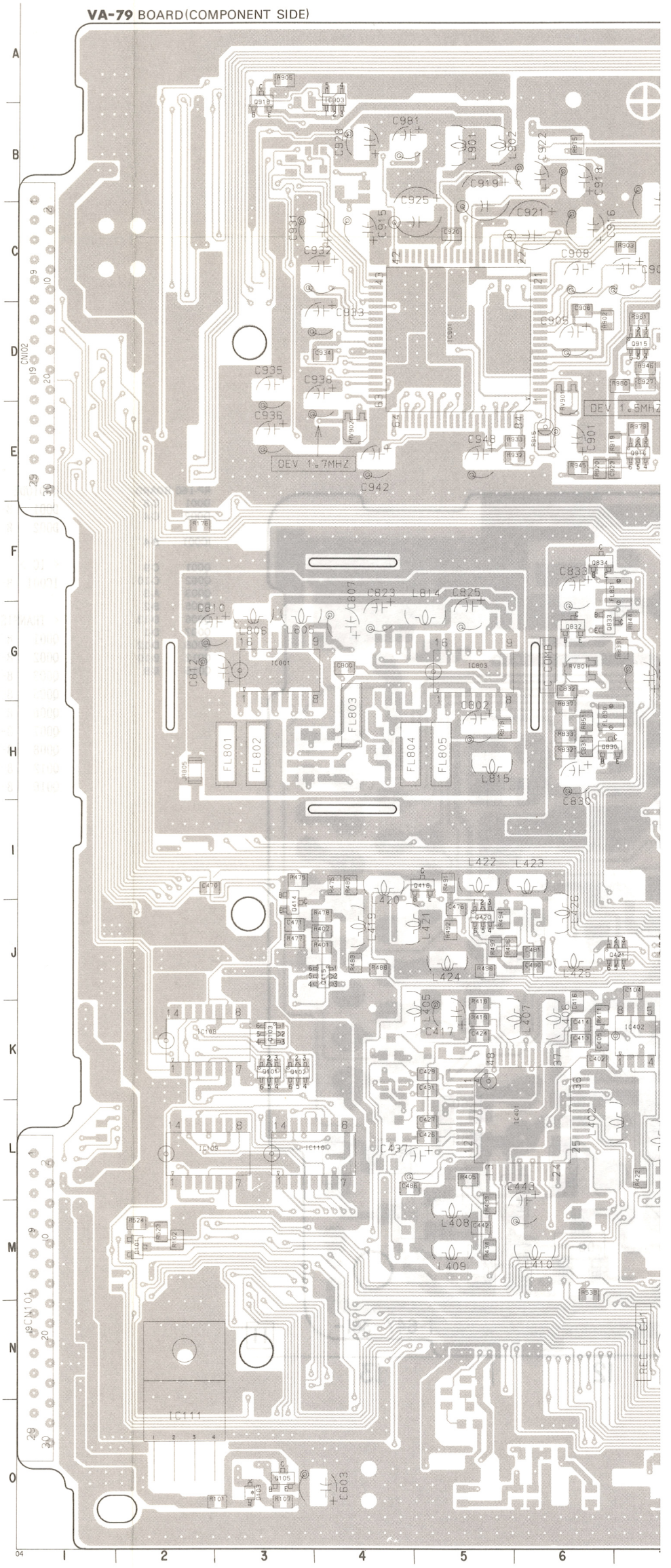
Q001	8-729-102-07 2SC2223-F13
Q002	8-729-102-07 2SC2223-F13
Q003	8-729-421-19 UN2213
Q005	8-729-120-28 2SC1623-L5L6
Q006	8-729-216-22 2SA1162-G
Q007	8-729-216-22 2SA1162-G
Q008	8-729-216-22 2SA1162-G
Q012	8-729-421-19 UN2213
Q016	8-729-120-28 2SC1623-L5L6

< DIODE >		
D101	8-719-400-18	MA152WK
D102	8-719-400-18	MA152WK
D103	8-719-404-46	MA110
D201	8-719-400-18	MA152WK
D301	8-719-404-46	MA110
D302	8-719-404-46	MA110
D601	8-719-400-18	MA152WK
D751	8-719-400-18	MA152WK
< IC >		
IC101	8-752-054-87	CXA1207AQ
IC103	8-759-710-86	NJM2233BM
IC104	8-759-711-47	NJM2209M
IC105	8-759-710-86	NJM2233BM
IC106	8-759-710-86	NJM2233BM
IC108	8-759-009-10	MC14069UBF
IC109	8-759-009-19	MC14081BF
IC110	8-759-009-10	MC14069UBF
IC111	8-759-507-17	PQ30RV1
IC301	8-752-039-34	CXA1208Q
IC401	8-752-058-03	CXA1509AQ
IC402	8-759-710-86	NJM2233BM
IC501	8-759-710-07	NJM2234M
IC751	8-752-031-49	CXA1203M
IC801	8-752-333-24	CXL1506M
IC803	8-752-333-24	CXL1506M
IC901	8-759-077-11	CXA1542Q
IC902	8-759-093-41	AN3900SC-E2
IC903	8-759-234-77	TC4S66F
< TRANSISTOR >		
Q101	8-729-420-20	XN4312
Q102	8-729-420-20	XN4312
Q103	8-729-420-20	XN4312
Q104	8-729-403-24	XN4210
Q105	8-729-900-53	DTC114EK
Q110	8-729-421-90	XN4113
Q111	8-729-420-20	XN4312
Q116	8-729-424-18	UN2113
Q117	8-729-216-22	2SA1162-G
Q119	8-729-202-38	2SC3326N
Q120	8-729-202-38	2SC3326N
Q121	8-729-420-12	XN4213
Q122	8-729-421-90	XN4113
Q129	8-729-424-18	UN2113
Q130	8-729-421-19	UN2213
Q133	8-729-120-28	2SC1623-L5L6
Q135	8-729-102-07	2SC2223-F13
Q136	8-729-421-90	XN4113
Q137	8-729-421-19	UN2213
Q143	8-729-120-28	2SC1623-L5L6
Q144	8-729-102-07	2SC2223-F13
Q145	8-729-403-24	XN4210
Q150	8-729-420-20	XN4312
Q151	8-729-421-19	UN2213
Q152	8-729-120-28	2SC1623-L5L6
Q153	8-729-120-28	2SC1623-L5L6
Q154	8-729-102-07	2SC2223-F13
Q155	8-729-120-28	2SC1623-L5L6
Q201	8-729-424-18	UN2113
Q202	8-729-424-18	UN2113
Q250	8-729-421-19	UN2213
Q251	8-729-402-19	XN6501
Q252	8-729-120-28	2SC1623-L5L6
Q253	8-729-402-19	XN6501
Q254	8-729-120-28	2SC1623-L5L6
Q255	8-729-120-28	2SC1623-L5L6
Q256	8-729-421-90	XN4113
Q257	8-729-402-19	XN6501
Q301	8-729-120-28	2SC1623-L5L6
Q302	8-729-421-19	UN2213
Q305	8-729-403-24	XN4210
Q311	8-729-120-28	2SC1623-L5L6
Q313	8-729-424-18	UN2113
Q314	8-729-420-12	XN4213
Q315	8-729-420-20	XN4312
Q320	8-729-120-28	2SC1623-L5L6
Q321	8-729-120-28	2SC1623-L5L6
Q322	8-729-120-28	2SC1623-L5L6
Q404	8-729-120-28	2SC1623-L5L6
Q408	8-729-120-28	2SC1623-L5L6
Q410	8-729-402-19	XN6501
Q411	8-729-120-28	2SC1623-L5L6
Q414	8-729-102-07	2SC2223-F13
Q415	8-729-420-12	XN4213
Q416	8-729-120-28	2SC1623-L5L6
Q417	8-729-120-28	2SC1623-L5L6
Q418	8-729-421-19	UN2213
Q419	8-729-424-18	UN2113
Q420	8-729-402-19	XN6501
Q421	8-729-420-12	XN4213
Q428	8-729-216-22	2SA1162-G
Q503	8-729-421-19	UN2213
Q504	8-729-424-18	UN2113
Q505	8-729-402-19	XN6501
Q506	8-729-402-19	XN6501
Q510	8-729-421-19	UN2213
Q511	8-729-216-22	2SA1162-G
Q515	8-729-216-22	2SA1162-G
Q516	8-729-421-19	UN2213
Q517	8-729-216-22	2SA1162-G
Q518	8-729-216-22	2SA1162-G
Q519	8-729-120-28	2SC1623-L5L6
Q520	8-729-120-28	2SC1623-L5L6
Q603	8-729-403-24	XN4210
Q604	8-729-216-22	2SA1162-G
Q609	8-729-420-12	XN4213
Q751	8-729-421-19	UN2213
Q753	8-729-402-19	XN6501
Q754	8-729-421-19	UN2213
Q755	8-729-421-19	UN2213
Q756	8-729-120-28	2SC1623-L5L6
Q830	8-729-216-22	2SA1162-G
Q831	8-729-120-28	2SC1623-L5L6
Q832	8-729-120-28	2SC1623-L5L6
Q833	8-729-216-22	2SA1162-G
Q834	8-729-120-28	2SC1623-L5L6
Q901	8-729-402-19	XN6501
Q902	8-729-422-27	2SD601A-Q
Q904	8-729-422-27	2SD601A-Q
Q912	8-729-902-99	DTC144TK
Q913	8-729-421-19	UN2213
Q915	8-729-402-19	XN6501
Q916	8-729-402-19	XN6501
Q917	8-729-421-19	UN2213
Q918	8-729-421-19	UN2213

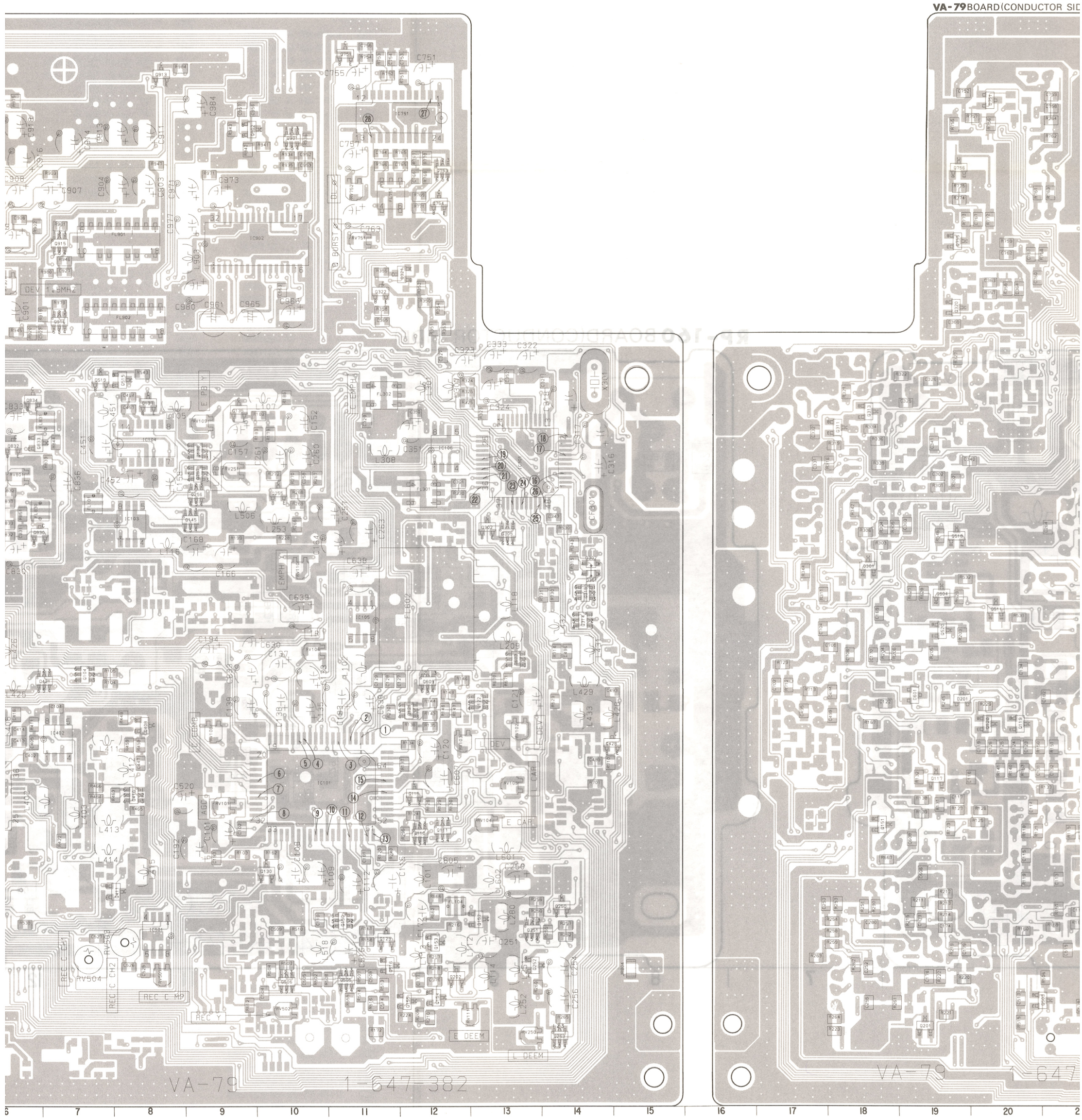
VA-79 BOARD			
D101	M-2	Q504	M-21
D102	M-22	Q505	N-11
D103	O-3	Q506	N-10
D201	J-19	Q510	L-23
D301	H-14	Q511	I-20
D302	H-14	Q515	F-8
D601	J-19	Q516	N-11
D751	B-20	Q517	F-24
		Q518	H-19
IC101	K-10	Q519	F-7
IC103	H-8	Q520	I-19
IC104	G-8	Q603	J-13
IC105	I-11	Q604	I-19
IC106	G-12	Q609	J-12
IC108	K-2	Q751	A-11
IC109	L-2	Q753	C-12
IC110	L-3	Q754	C-12
IC111	O-2	Q755	D-19
IC301	G-13	Q756	C-19
IC401	L-6	Q830	H-6
IC402	K-7	Q831	G-25
IC501	N-8	Q832	G-6
IC751	B-11	Q833	G-6
IC801	G-3	Q834	F-6
IC803	G-5	Q901	B-10
IC901	D-5	Q902	B-9
IC902	D-9	Q904	D-22
IC903	A-4	Q912	C-22
		Q913	B-8
Q101	K-3	Q915	D-7
Q102	K-3	Q916	E-7
Q103	K-3	Q917	B-27
Q104	J-7	Q918	B-3
Q105	O-3		
Q110	L-12		
Q111	L-12		
Q116	L-12		
Q117	K-19		
Q119	K-20		
Q120	K-20		
Q121	J-12		
Q122	J-13		
Q129	N-11		
Q130	M-10		
Q133	F-21		
Q135	F-9		
Q136	G-9		
Q137	F-8		
Q143	H-21		
Q144	H-22		
Q145	H-9		
Q150	M-11		
Q151	L-18		
Q152	M-13		
Q153	N-12		
Q154	N-12		
Q155	N-12		
Q201	O-19		
Q202	N-12		
Q250	M-14		
Q251	M-13		
Q252	N-13		
Q253	O-14		
Q254	H-21		
Q255	G-10		
Q256	G-9		
Q257	G-9		
Q301	H-18		
Q302	H-13		
Q305	H-3		
Q311	F-18		
Q313	F-18		
Q314	I-14		
Q315	I-14		
Q320	E-19		
Q321	D-11		
Q322	E-11		
Q404	K-25		
Q408	K-8		
Q410	L-8		
Q411	M-8		
Q414	J-3		
Q415	J-4		
Q416	I-5		
Q417	I-28		
Q418	J-26		
Q419	J-26		
Q420	J-5		
Q421	J-6		
Q428	K-14		
Q503	N-20		

VA-79 (VIDEO PROCESS, AFM PROCESS) PRINTED WIRING BOARD

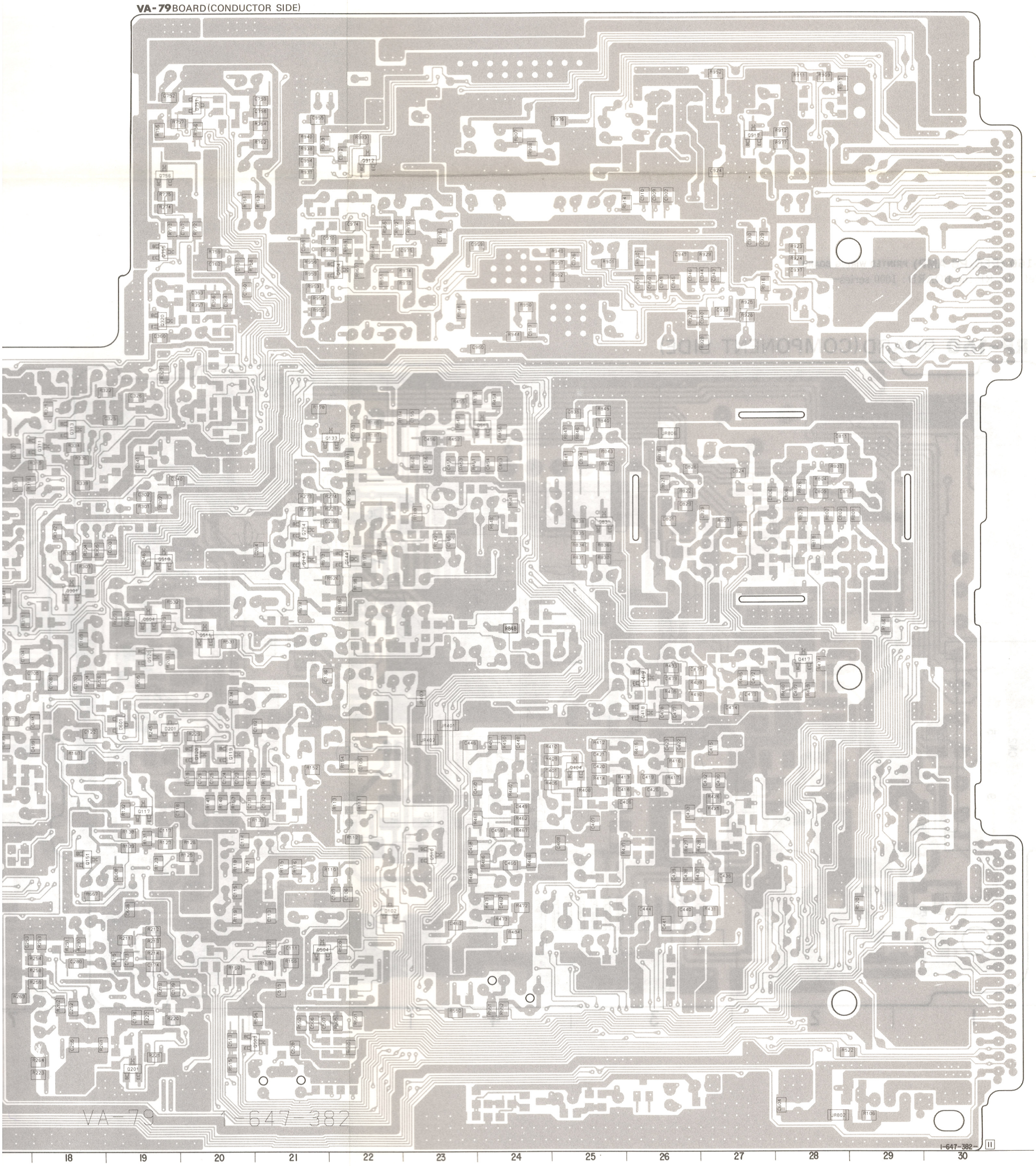
—Ref. No. VA-79 BOARD : 2000 series—



VA-79 BOARD (CONDUCTOR SID



VA-79 BOARD (CONDUCTOR SIDE)

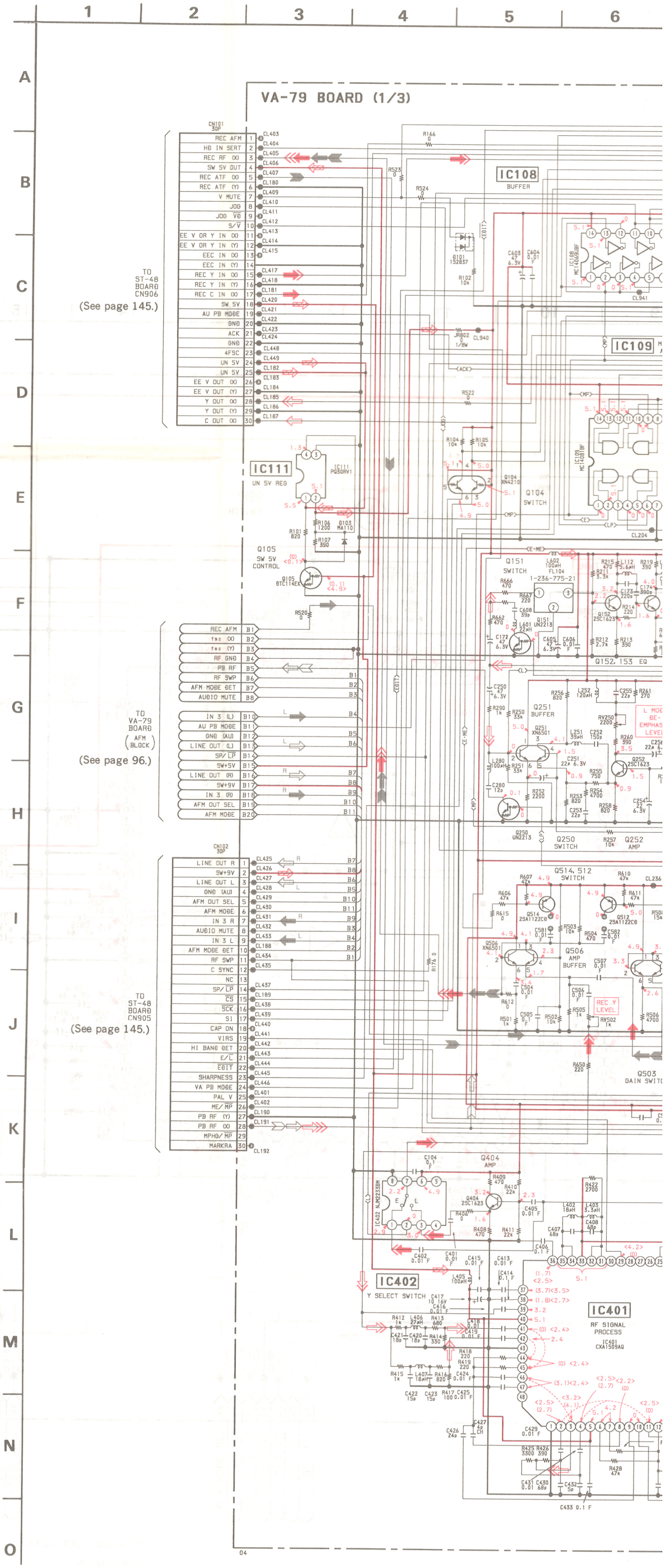


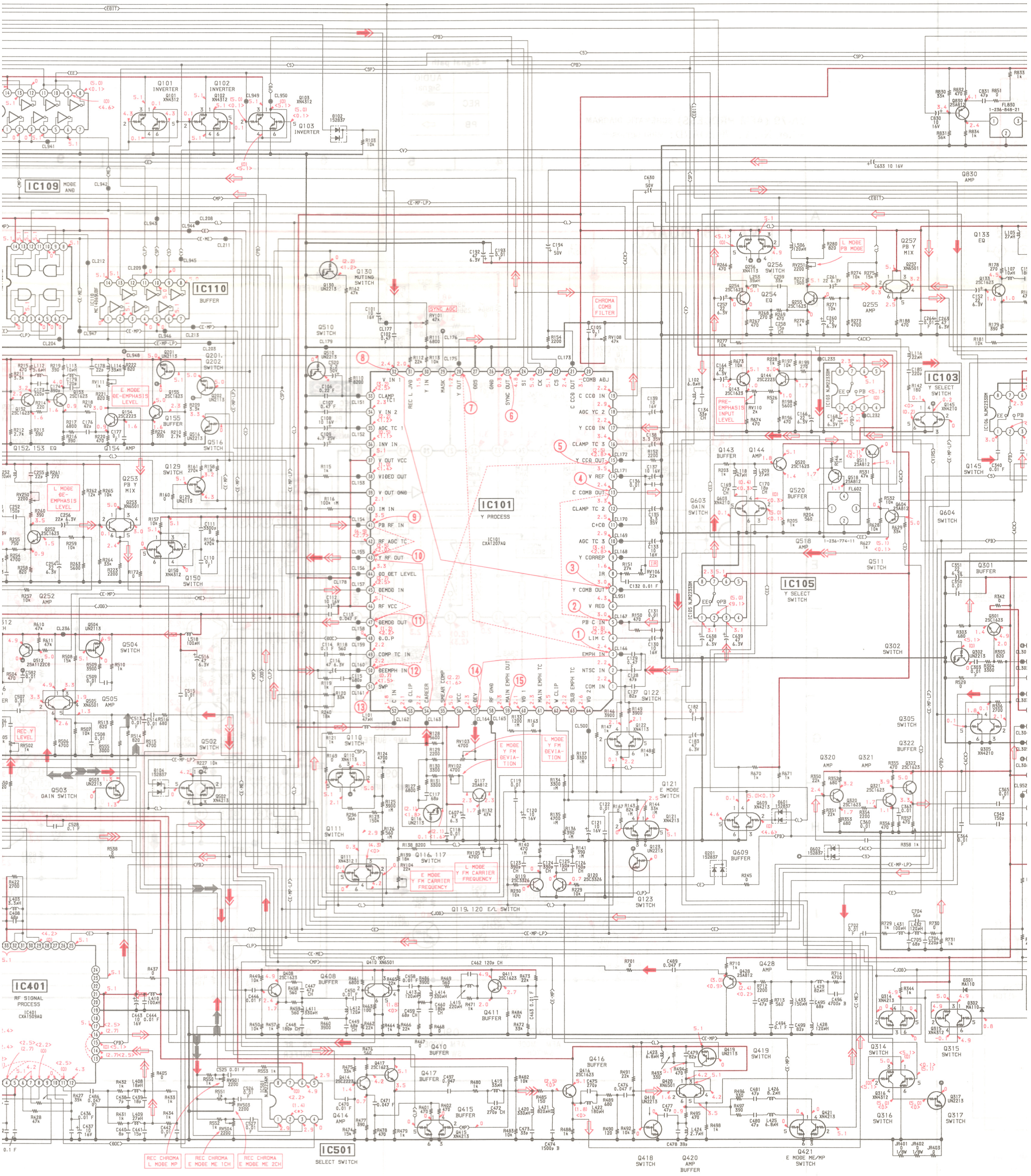
VA-79 (VIDEO PROCESS) SCHEMATIC DIAGRAM

—Ref. No. VA-79 BOARD : 2000 series—

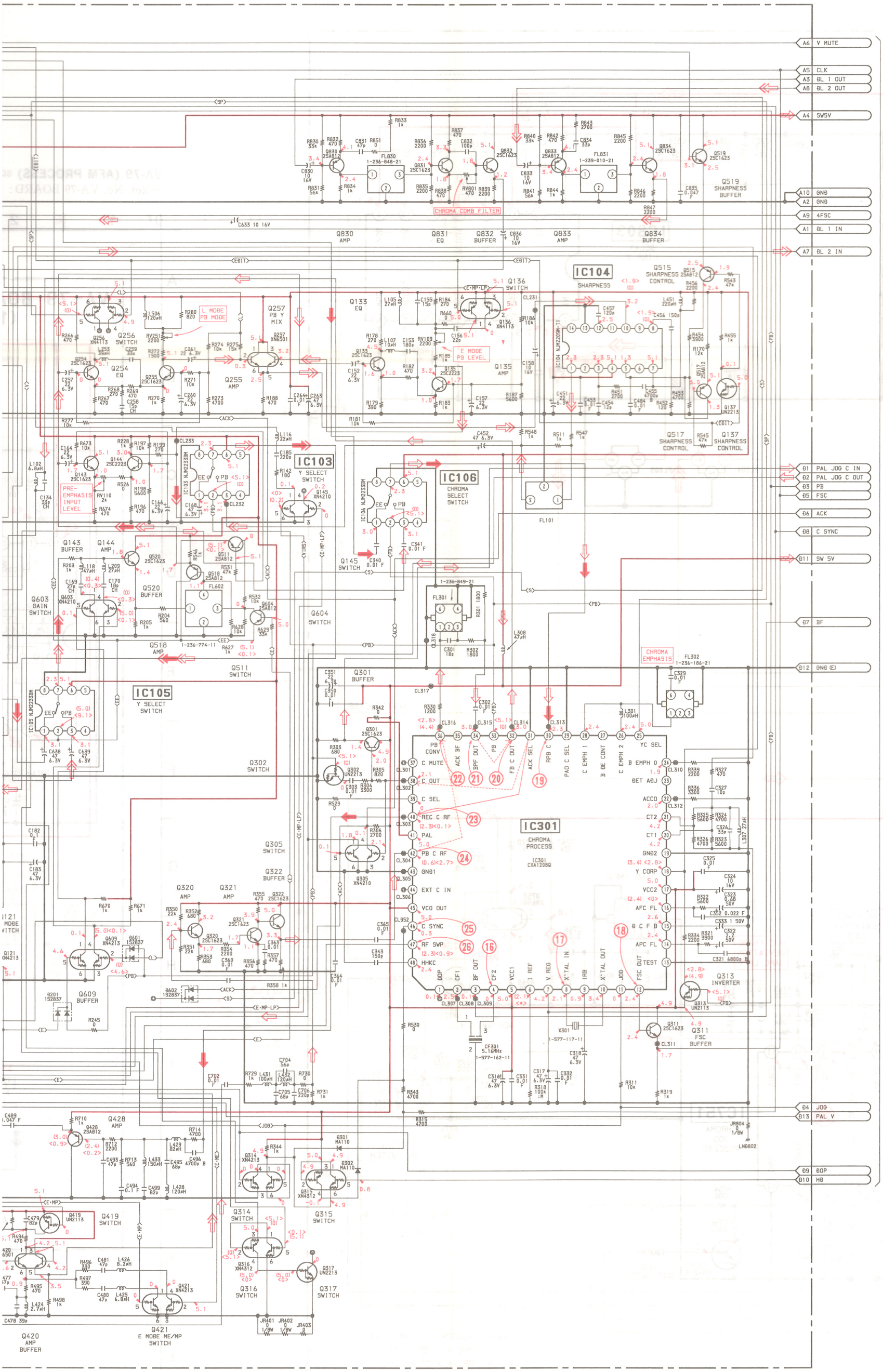
VA-79 BOARD

① IC101 ③ REC/PB 0.5Vp-p(H)	⑪ IC101 ⑰ PB 0.3Vp-p(H)	㉑ IC301 ㉞ PB 0.17Vp-p(H)
② IC101 ⑤ PB 0.28Vp-p(H)	⑫ IC101 ㊿ PB 0.46Vp-p(H)	㉒ IC301 ㊱ PB 1.0Vp-p(H)
③ IC101 ⑦ REC/PB 0.5Vp-p(H)	⑬ IC101 ㊶ REC/PB 1.7Vp-p(40ms)	㉓ IC301 ㊵ REC 0.46Vp p(H)
④ IC101 ⑬ PB 0.5Vp-p(H)	⑭ IC101 ㊼ REC 0.5Vp-p(H)	㉔ IC301 ㊷ PB 0.09Vp-p(H)
⑤ IC101 ⑮ PB 0.5Vp-p(H)	⑮ IC101 ㊾ REC 0.7Vp-p(H)	㉕ IC301 ㊻ REC/PB 2.4Vp-p(H)
⑥ IC101 ㉕ REC/PB 2.5Vp-p(H)	⑯ IC301 ④ REC/PB 0.18Vp-p(5.16MHz)	㉖ IC301 ㊼ REC/PB 5.0Vp-p(40ms)
⑦ IC101 ㉘ REC/PB 0.5Vp-p(H)	⑰ IC301 ⑧ REC 0.17Vp-p(4.43MHz) PB 0.30Vp-p(4.43MHz)	㉗ IC751 ② PB 0.3Vp-p(H)
⑧ IC101 ㉜ REC 0.46Vp-p(H)	⑱ IC301 ⑫ REC/PB 0.4Vp-p(4.43MHz)	㉘ IC751 ⑮ PB 0.48Vp-p(H)
⑨ IC101 ㊶ PB 0.1V/div 0.1μsec/div	⑲ IC301 ㉚ PB 0.24Vp-p(H)	
⑩ IC101 ㊸ REC 0.2V/div 0.1μsec/div	⑳ IC301 ㉜ PB 0.28Vp-p(H)	



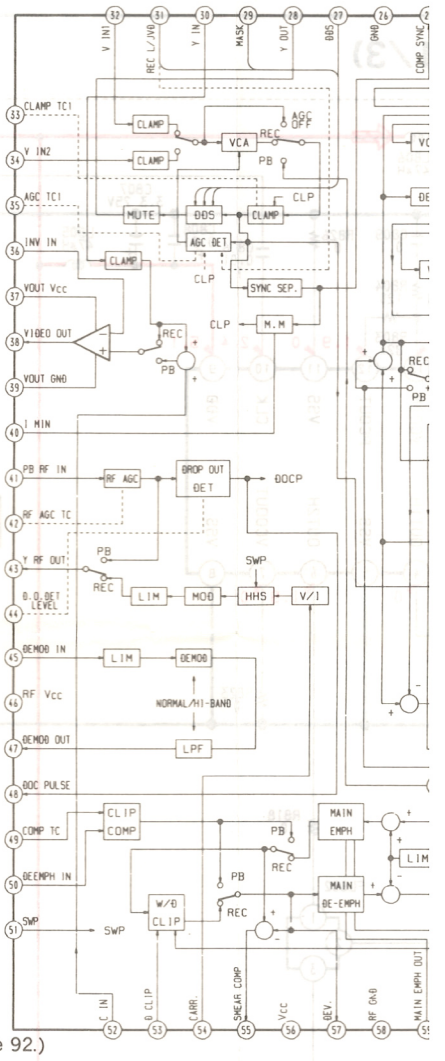

6
7
8
9
10
11
12
13
14
15
16
17
IC109
MODE AND
IC110
BUFFER
IC101
Y PROCESS
IC101 CXA1207AQ
IC103
Y SELECT SWITCH
IC105
Y SELECT SWITCH
IC401
RF SIGNAL PROCESS
IC401 CXA1509AQ
IC501
SELECT SWITCH
Q101 INVERTER
Q102 INVERTER
Q103 INVERTER
Q130 MUTING SWITCH
Q510 SWITCH
Q201, Q202 SWITCH
Q155 BUFFER
Q154 AMP
Q152, 153 EQ
Q516 SWITCH
Q129 SWITCH
Q150 SWITCH
Q253 PB Y MIX
Q252 AMP
Q504 SWITCH
Q505 AMP
Q502 SWITCH
Q503 GAIN SWITCH
Q110 SWITCH
Q111 SWITCH
Q116, 117 SWITCH
Q119, 120 E/L SWITCH
Q123 SWITCH
Q121 E MODE SWITCH
Q122 SWITCH
Q256 SWITCH
Q254 EQ
Q255 AMP
Q257 PB Y MIX
Q133 EQ
Q143 BUFFER
Q144 AMP
Q520 BUFFER
Q518 AMP
Q603 GAIN SWITCH
Q604 SWITCH
Q511 SWITCH
Q830 AMP
Q609 BUFFER
Q301 BUFFER
Q302 SWITCH
Q305 SWITCH
Q322 BUFFER
Q320 AMP
Q321 AMP
Q408 BUFFER
Q411 BUFFER
Q410 BUFFER
Q417 BUFFER
Q415 BUFFER
Q414 AMP
Q416 BUFFER
Q419 SWITCH
Q418 SWITCH
Q420 AMP BUFFER
Q421 E MODE ME/MP SWITCH
Q428 AMP
Q314 SWITCH
Q315 SWITCH
Q316 SWITCH
Q317 SWITCH
CHROMA COMB FILTER
SYNC AGC
L MODE PB MODE
PRE-EMPHASIS INPUT LEVEL
E MODE DE-EMPHASIS LEVEL
L MODE DE-EMPHASIS LEVEL
E MODE Y FM DEVIATION
L MODE Y FM DEVIATION
E MODE Y FM CARRIER FREQUENCY
L MODE Y FM CARRIER FREQUENCY
REC Y LEVEL
REC CHROMA L MODE MP
REC CHROMA E MODE ME 1CH
REC CHROMA E MODE ME 2CH
FL830 1-236-848-21
Q518 1-236-774-11
FL602

14 15 16 17 18 19 20 21 22 23



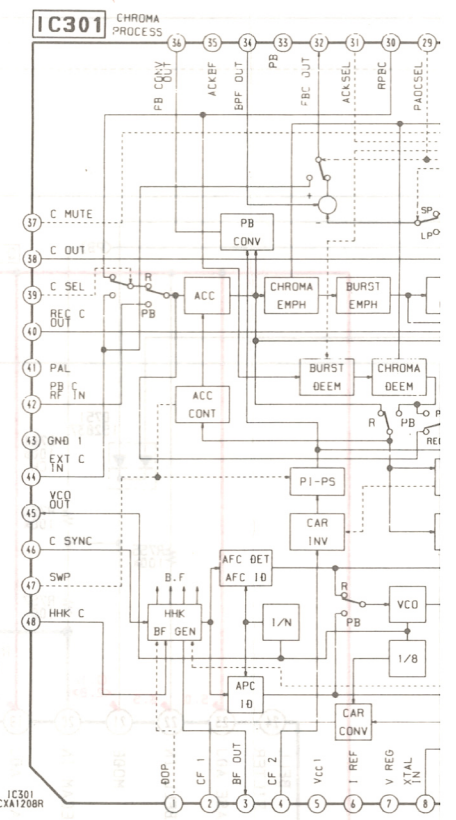
IC101

Y PROCESS



IC301

CHROMA PROCESS

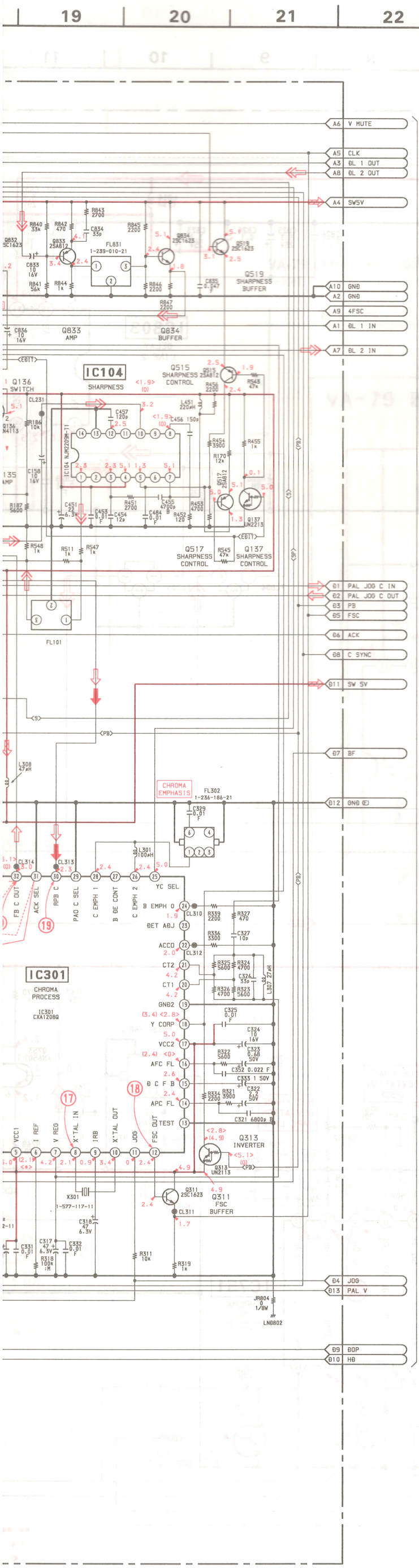


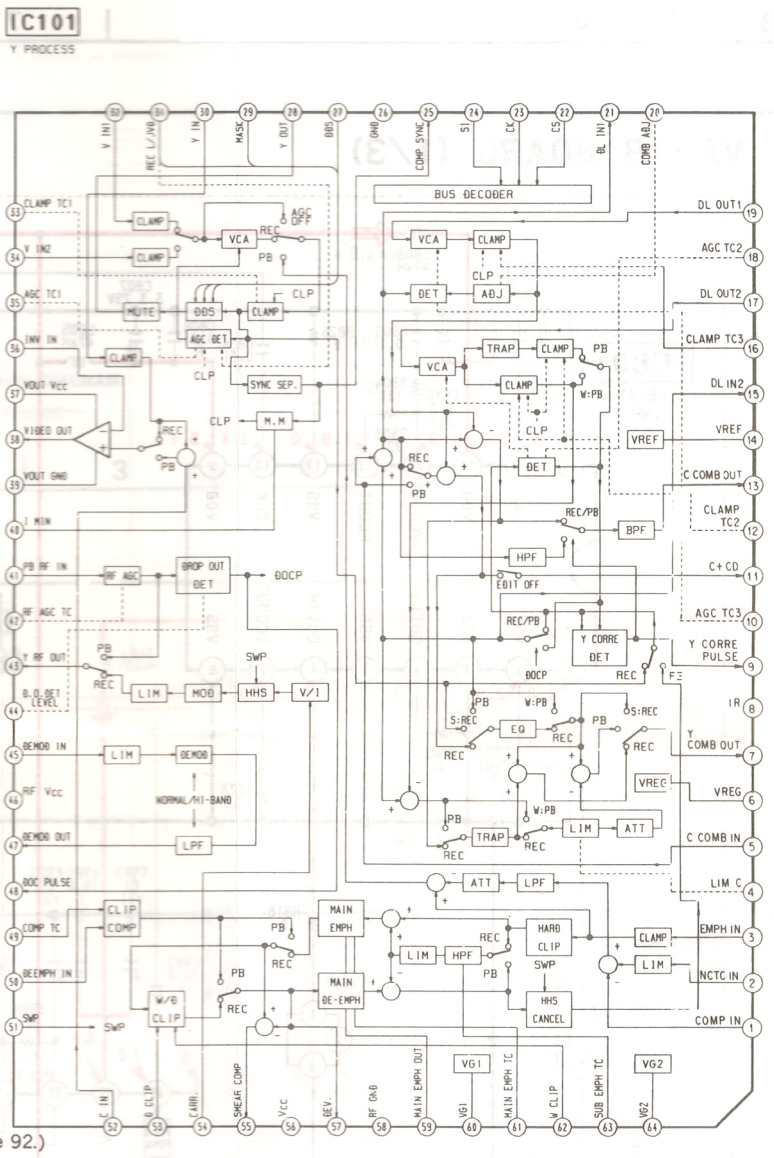
• Signal path

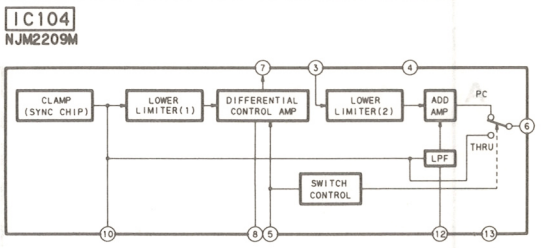
	VIDEO Signal	
	CHROMA	Y
REC	➡	➡
PB	⇨	⇨

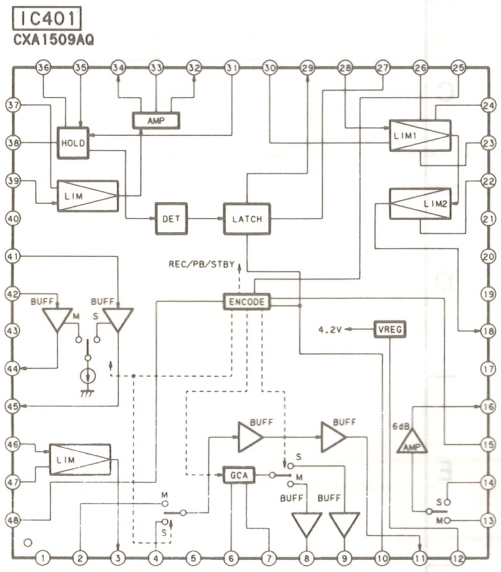
• Signal path

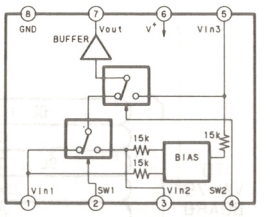
Ref.signal

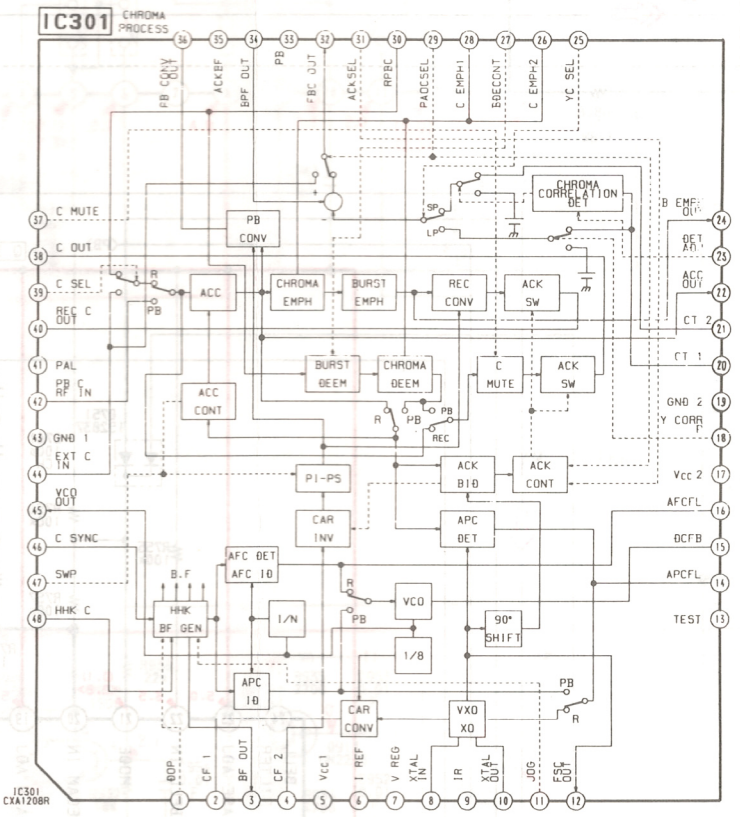












• Signal path

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	⇨	⇨	⇨	⇨

• Signal path

	REC	REC/PB	PB
Ref.signal	➡	➡	⇨

• Signal path

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	⇨	⇨	⇨	⇨

VA-79 (VIDEO PROCESS) SCHEMATIC DIAGRAM

—Ref. No. VA-79 BOARD : 2000 series—

VA-79 BOARD (1/3)

IC801 DELAY LINE 1

IC803 DELAY LINE 2

IC751 CXA1203M — CHROMA JOG PROCESS

FL801, FL802, FL803, FL804, FL805

FL751 1-236-188-21

Q751 UN2213 — DOP SWITCH

Q753 XN6501 1 2

Q756 MUTE

HUE PHASE DEVIATION (FSC)

HUE PHASE DEVIATION (APC LPF)

TO VA-79 BOARD (VIDEO (1) BLOCK) (See page 90.)

DL 1 IN	A1
GND	A2
DL 1 OUT	A3
SW5V	A4
CLK	A5
V·MUTE	A6
DL 2 IN	A7
DL 2 OUT	A8
4FSC	A9
GND	A10

PAL JOG C IN	D1
PAL JOG C OUT	D2
PB	D3
JOG	D4
FSC	D5
ACK	D6
BF	D7
C SYNC	D8
DOP	D9
HD	D10
SW 5V	D11
GND (E)	D12
PAL V	D13

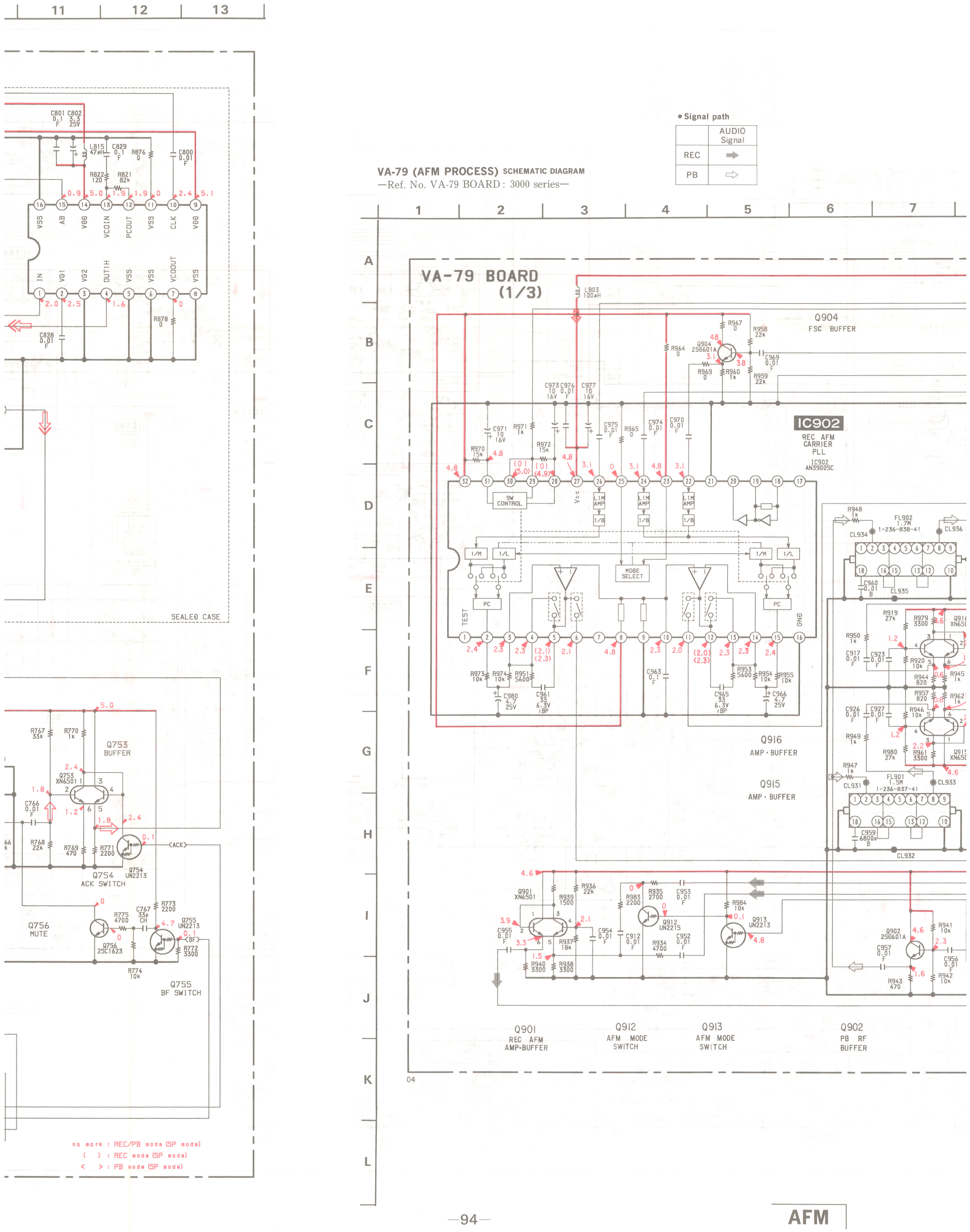
04

VA-79 (AFM PROCESS) SCHEMATIC DIAGRAM

—Ref. No. VA-79 BOARD : 3000 series—

• Signal path

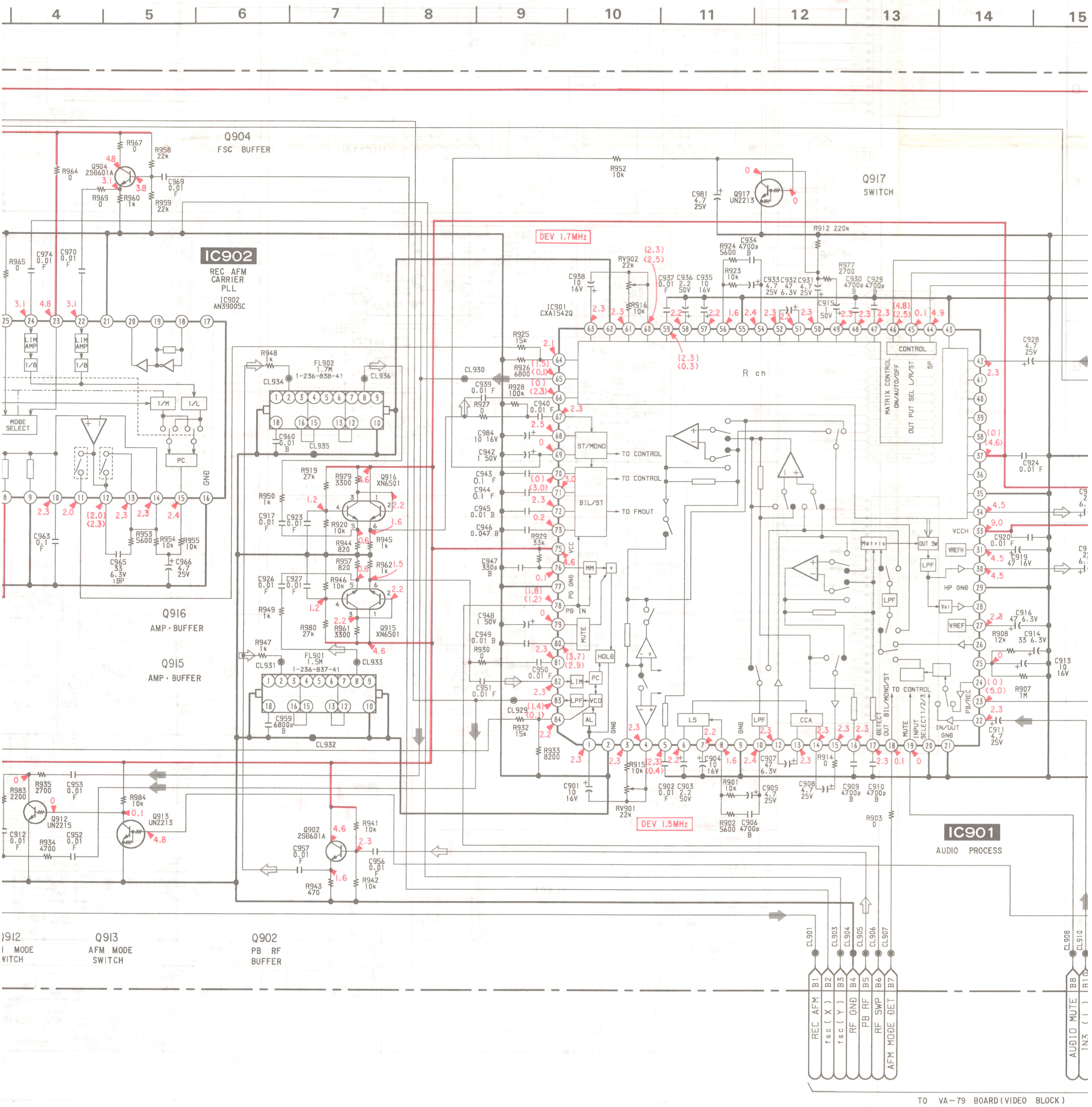
	AUDIO Signal
REC	➡
PB	⇨

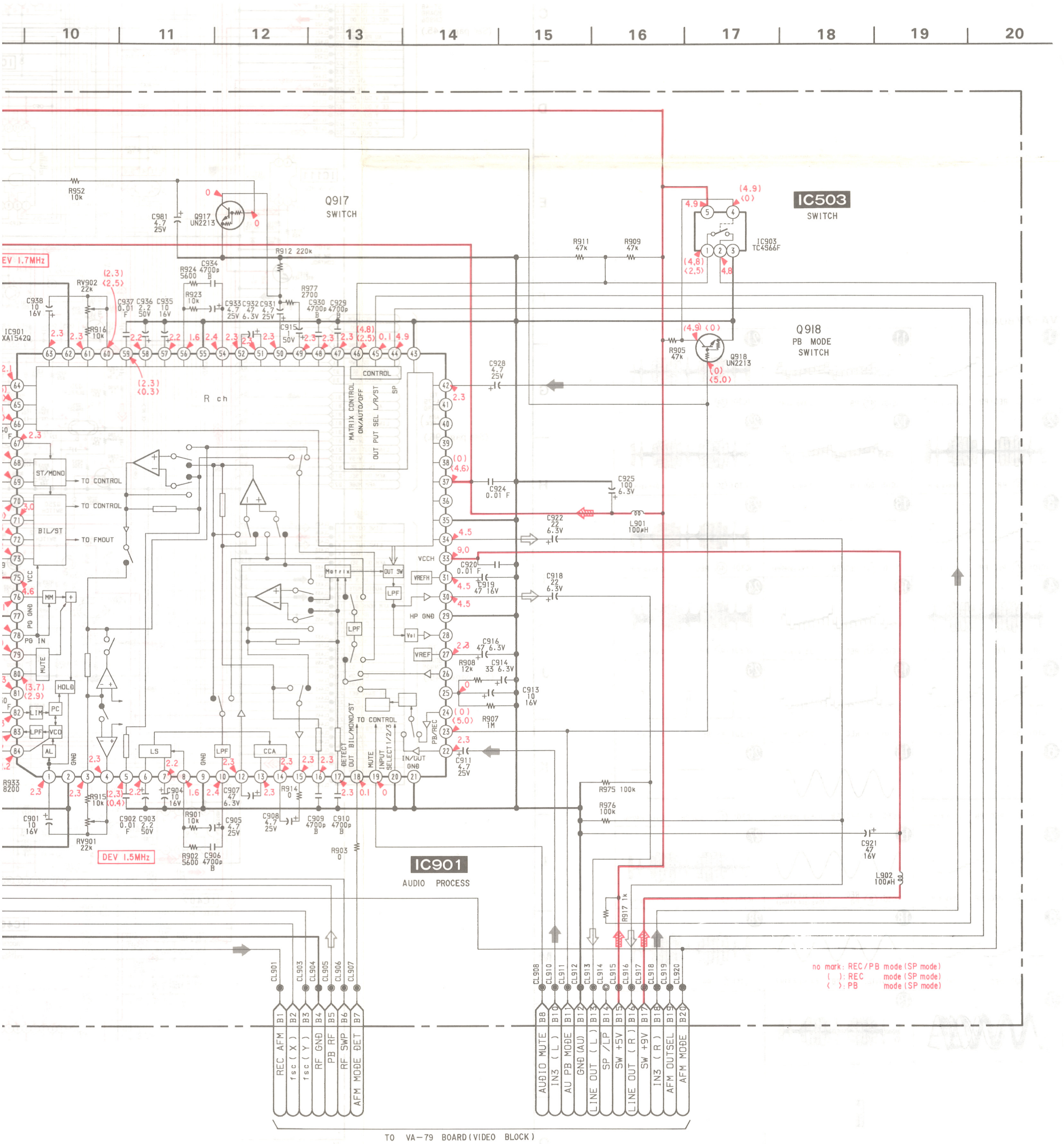


AFM

• Signal path

	AUDIO Signal
REC	➡
PB	⇨

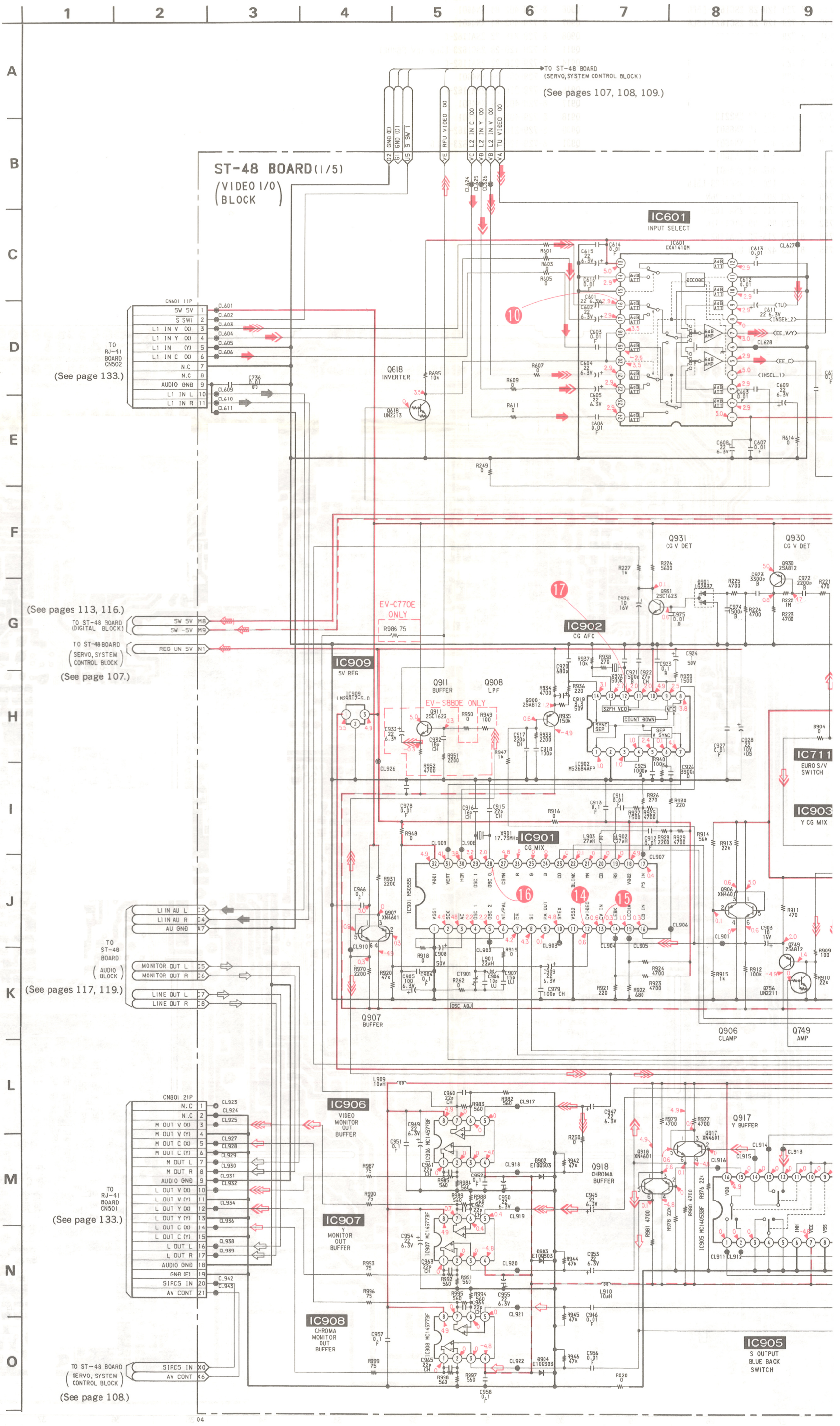



10 11 12 13 14 15 16 17 18 19 20
Q917
SWITCH
R952 10k
C981 4.7 25V
Q917 UN2213
R912 220k
R911 47k
R909 47k
IC503
SWITCH
IC903 TC4S66F
Q918
PB MODE
SWITCH
R905 47k
Q918 UN2213
C928 4.7 25V
C924 0.01 F
C925 100 6.3V
L901 100μH
C922 22 6.3V
C918 22 6.3V
C920 0.01 F
C919 47 16V
C916 47 6.3V
C914 33 6.3V
R908 12k
C913 10 16V
R907 1M
C911 4.7 25V
R975 100k
R976 100k
C921 47 16V
L902 100μH
R917 1k
IC901 XA1542Q
EV 1.7MHz
DEV 1.5MHz
RV902 22k
RV901 22k
C938 10 16V
C937 0.01 F
C936 2.2 50V
C935 10 16V
R916 10k
R924 5600 B
R923 10k
C934 4700p B
C933 4.7 25V
C932 47 6.3V
C931 4.7 25V
R977 2700
C930 4700p B
C929 4700p B
C915 50V
R933 8200
R915 10k
C901 10 16V
C902 0.01 F
C903 2.2 50V
C904 10 16V
R901 10k
R902 5600
C906 4700p B
C905 4.7 25V
C907 47 6.3V
C908 4.7 25V
R914 0
C909 4700p B
C910 4700p B
R903 0
CONTROL
MATRIX CONTROL ON/AUTO/OFF
OUT PUT SEL L/R/ST
SP
R ch
ST/MONO
BIL/ST
TO CONTROL
TO FMOUT
MM
PG GND
PG IN
MUTE
HOLD
LIM
PC
LPF
VCO
AL
GND
LS
LPF
CCA
Matrix
OUT SW
LPF
VCCH
VREFH
HP GND
Vol
VREF
DETECT OUT BIL/MONO/ST
MUTE
INPUT SELECT 1/2/3
TO CONTROL
IN/OUT GND
PB/REC
IC901
AUDIO PROCESS
CL901 REC AFM B1
CL903 fsc (X) B2
CL904 fsc (Y) B3
CL905 RF GND B4
CL906 PB RF B5
CL907 RF SWP B6
CL908 AFM MODE DET B7
CL910 AUDIO MUTE B8
CL911 IN3 (L) B10
CL912 AU PB MODE B11
CL913 GND (AU) B12
CL914 LINE OUT (L) B13
CL915 SP /LP B14
CL916 SW +5V B15
CL917 LINE OUT (R) B16
CL918 SW +9V B17
CL919 IN3 (R) B18
CL920 AFM OUTSEL B19
AFM MODE B20
TO VA-79 BOARD (VIDEO BLOCK)
no mark: REC/PB mode (SP mode)
( ): REC mode (SP mode)
〈 〉: PB mode (SP mode)

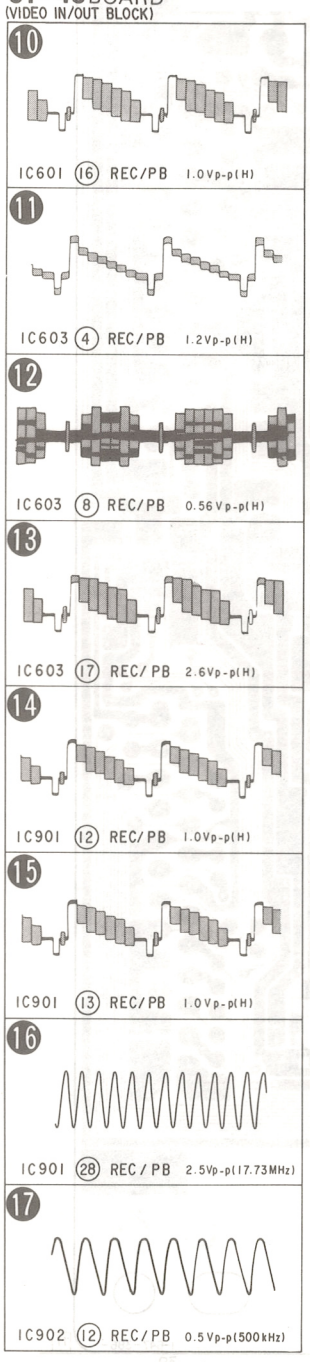
(See page 87.)

ST-48 (VIDEO IN/OUT) SCHEMATIC DIAGRAM

—Ref. No. ST-48 BOARD : 3000 series—



ST-48 BOARD (VIDEO IN/OUT BLOCK)



8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19

IC603
DIGITAL Y/CHROMA SEP
IC603 MC141625FU

IC711
EURO S/V SWITCH

IC903
Y CG MIX

IC904
CHROMA CG MIX

IC905
S OUTPUT BLUE BACK SWITCH

IC710
PB/JOG SWITCH

IC701
S/V, EE/PB SWITCH

IC702
S/V, EE/PB SWITCH

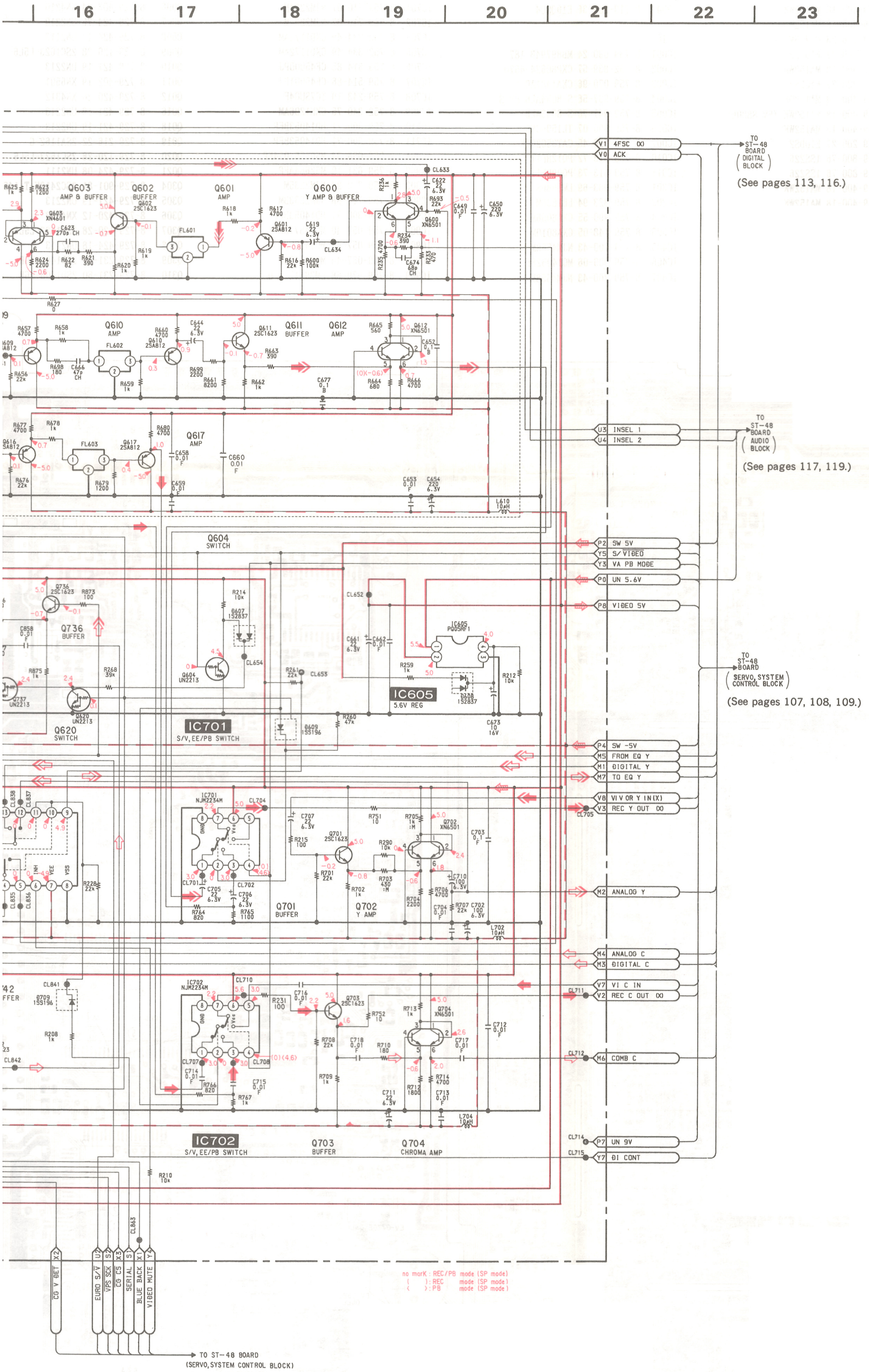
IC605
5.6V REG

Q603 AMP & BUFFER
Q602 BUFFER 2SC1623
Q601 AMP
Q600 Y AMP & BUFFER
Q609 AMP
Q610 AMP
Q611 2SC1623 BUFFER
Q612 AMP
Q616 AMP
Q617 AMP
Q604 SWITCH
Q738 Y/CHROMA MIX
Q736 BUFFER
Q737 SWITCH
Q620 SWITCH
Q930 CG V DET
Q901 AMP
Q740 BUFFER
Q739 BUFFER
Q906 CLAMP
Q749 AMP
Q756 MUTE
Q902 AMP
Q741 BUFFER
Q743 CHROMA MUTE
Q742 BUFFER
Q703 2SC1623 BUFFER
Q704 CHROMA AMP
Q917 Y BUFFER
Q916 Y BUFFER
Q915 Y/C SEP, C BUFFER
Q914 Y BUFFER

CG V DET
EURO S/V
VPS SCK
CG CS
SERIAL
BLUE BACK
VIDEO MUTE

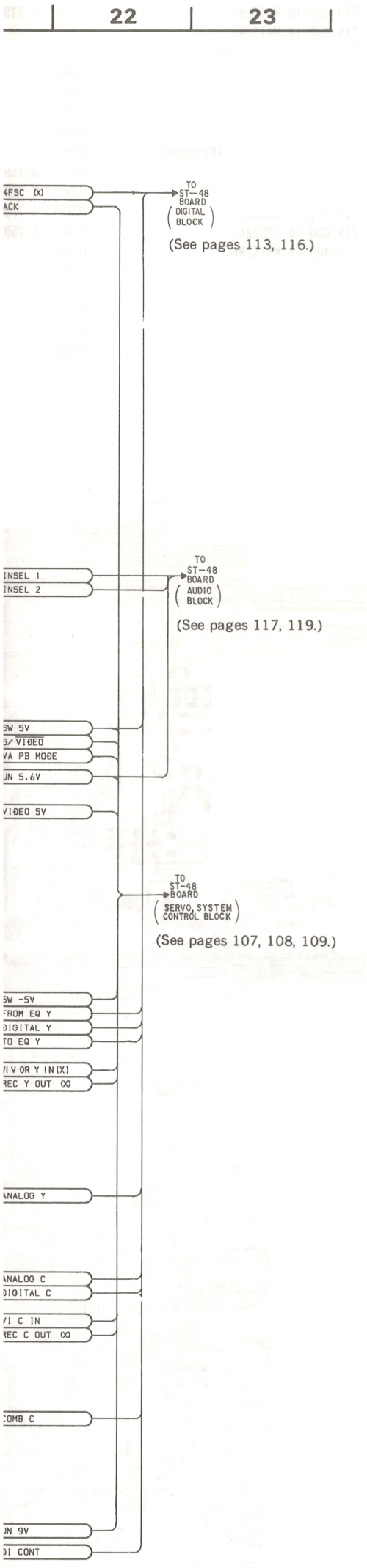
TO ST-48 BOARD
(SERVO, SYSTEM CONTROL BLOCK)

(See pages 107, 108, 109.)



• **Signal path**

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	⇨	⇨	⇨	⇨



• Signal path

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	⇨	⇨	⇨	⇨

< DIODE >

D001	8-719-200-36	E10QS04
D002	8-719-200-27	E10DS2
D003	8-719-200-36	E10QS04
D004	8-719-400-18	MA152WK
D006	8-719-400-18	MA152WK
D008	8-719-106-23	RD7.5M-B2
D010	8-719-200-27	E10DS2
D012	8-719-400-18	MA152WK
D015	8-719-200-27	E10DS2
D017	8-719-400-18	MA152WK
D019	8-719-400-18	MA152WK (EV-S880E)
D020	8-719-400-18	MA152WK
D301	8-719-200-27	E10DS2
D401	8-719-800-76	1SS226
D402	8-719-800-76	1SS226
D403	8-719-400-18	MA152WK
D404	8-719-400-18	MA152WK
D607	8-719-400-18	MA152WK
D608	8-719-400-18	MA152WK
D609	8-719-801-41	1SS196
D703	8-713-300-88	1T33C-01
D704	8-713-300-88	1T33C-01
D709	8-719-8	
D901	8-719-4	
D902	8-719-2	
D903	8-719-2	
D904	8-719-2	

< IC >

IC001	8-759-0
IC002	8-752-8
IC003	8-759-0
IC004	8-759-9
IC005	8-759-9
IC006	8-759-9
IC007	8-759-7
IC010	8-759-5
IC011	8-759-5
IC301	8-759-9
IC302	8-759-8
IC304	8-759-9
IC305	8-759-1
IC405	8-759-7
IC406	8-759-0
IC407	8-759-7

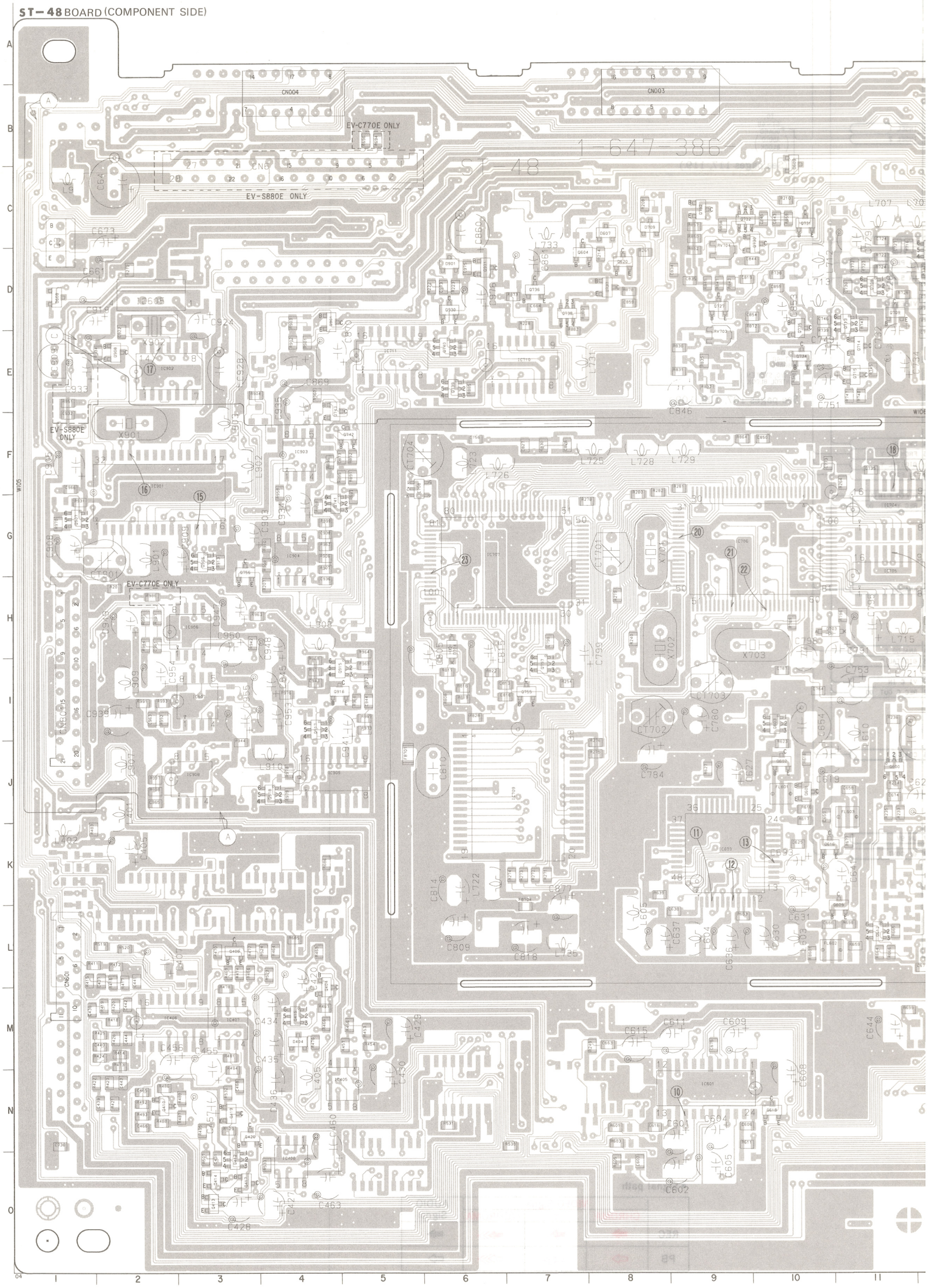
ST-48 (VIDEO IN/OUT, SERVO/SYSTEM CONTROL, DIGITAL, AUDIO) PRINTED WIRING BOARD

—Ref. No. ST-48 BOARD : 3000 series—

ST-48 BOARD

D001	L-15	Q403	K-36
D002	L-16	Q404	L-4
D003	M-26	Q407	L-36
D004	M-23	Q408	L-3
D006	M-26	Q409	K-37
D008	B-39	Q410	N-2
D010	O-26	Q411	M-38
D012	H-26	Q412	O-3
D015	N-26	Q413	O-3
D017	I-15	Q414	O-3
D019	G-18	Q415	M-4
D020	M-16	Q416	M-37
D301	F-24	Q417	O-3
D401	L-35	Q418	N-37
D402	L-36	Q419	N-3
D403	L-36	Q420	N-3
D404	M-4	Q600	J-11
D607	C-8	Q601	J-10
D608	D-1	Q602	J-10
D609	C-10	Q603	I-10
D703	H-10	Q604	D-7
D704	H-6	Q609	L-11
D709	C-8	Q610	L-30
D901	D-6	Q611	L-29
D902	H-38	Q612	L-11
D903	H-38	Q616	K-10
D904	I-38	Q617	K-30
		Q618	N-10
IC001	L-17	Q620	D-8
IC002	I-17	Q701	I-13
IC003	G-15	Q702	H-13
IC004	L-16	Q703	L-13
IC005	M-26	Q704	L-13
IC006	M-16	Q705	D-12
IC007	M-16	Q706	D-12
IC010	N-14	Q707	D-29
IC011	N-13	Q708	D-11
IC301	E-17	Q709	D-11
IC302	E-16	Q710	D-28
IC304	D-15	Q711	E-12
IC305	C-16	Q713	D-11
IC405	N-4	Q714	E-11
IC406	M-2	Q715	E-11
IC407	M-3	Q722	G-31
IC408	O-4	Q723	G-33
IC601	N-9	Q724	E-31
IC603	K-9	Q726	E-31
IC605	D-2	Q727	D-9
IC701	J-13	Q728	D-31
IC702	L-13	Q729	D-32
IC704	G-11	Q730	C-10
IC705	G-11	Q731	C-10
IC706	G-9	Q732	C-9
IC707	G-6	Q733	F-32
IC708	F-5	Q734	E-10
IC709	J-7	Q735	D-10
IC710	E-7	Q736	D-7
IC711	E-5	Q737	D-8
IC901	F-2	Q738	D-7
IC902	E-2	Q739	E-6
IC903	F-4	Q740	E-6
IC904	G-4	Q741	G-4
IC905	J-4	Q742	F-5
IC906	H-3	Q743	F-4
IC907	I-3	Q749	G-37
IC908	J-3	Q752	C-9
IC909	E-1	Q753	F-31
		Q755	I-7
Q002	G-25	Q756	G-3
Q003	C-1	Q757	I-7
Q005	N-17	Q901	D-4
Q006	I-15	Q902	F-36
Q007	J-15	Q906	G-3
Q008	J-25	Q907	G-1
Q009	B-18	Q908	E-2
Q010	I-15	Q911	E-39
Q011	G-14	Q914	H-36
Q012	J-14	Q915	I-4
Q016	I-26	Q916	I-4
Q018	H-26	Q917	I-4
Q019	G-26	Q918	J-4
Q020	H-14	Q930	D-6
Q021	G-14	Q931	D-6
Q304	D-18		
Q305	D-18		
Q306	F-16		
Q307	C-18		
Q308	E-17		
Q309	D-19		
Q310	E-19		
Q312	D-18		

ST-48 BOARD (COMPONENT SIDE)



D709	8-719-801-41	1SS196
D901	8-719-400-18	MA152WK
D902	8-719-200-36	E10QS04
D903	8-719-200-36	E10QS04
D904	8-719-200-36	E10QS04

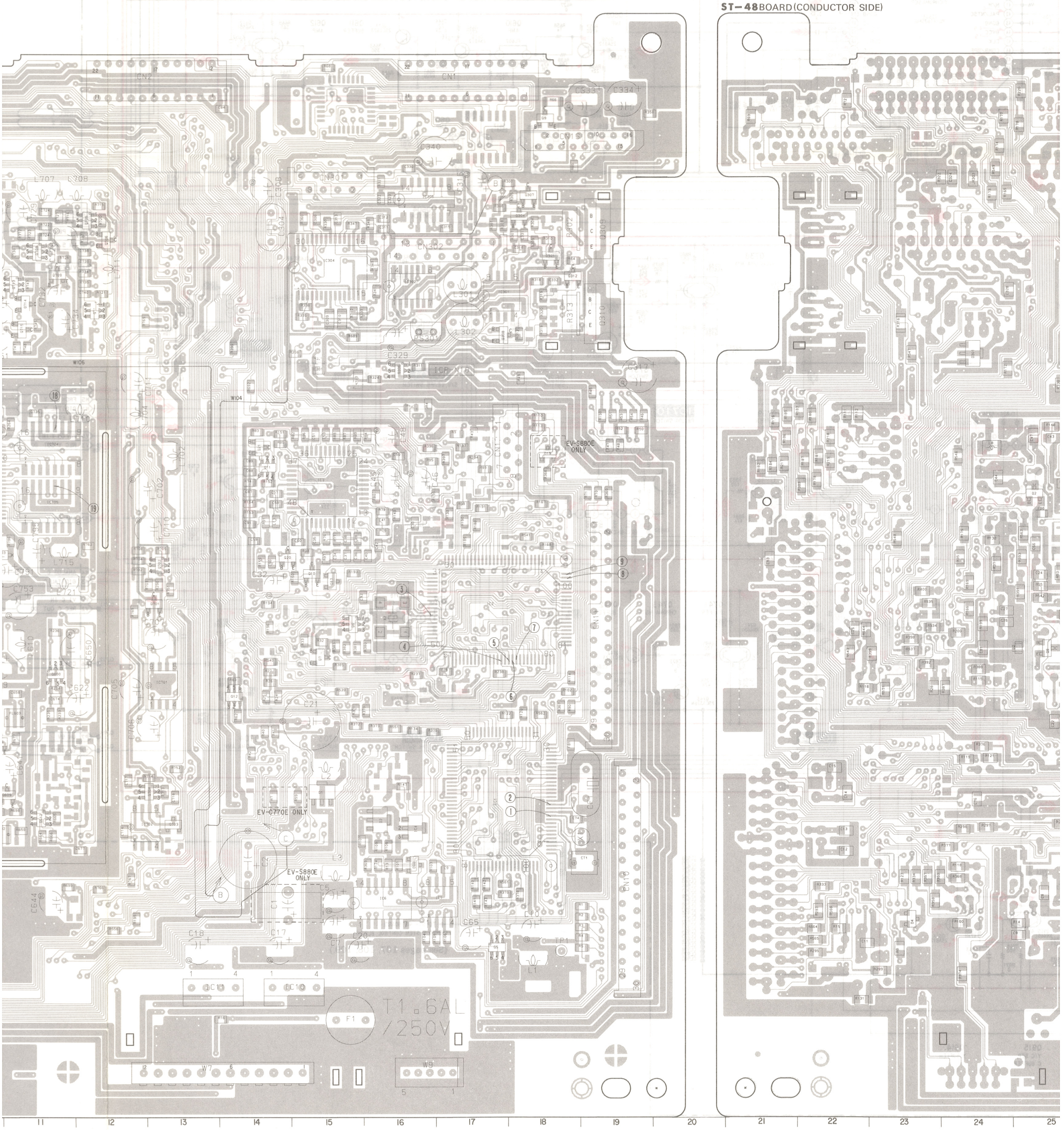
< IC >

IC001	8-759-090-24	MB89794B-187
IC002	8-752-839-57	CXP80624-457Q
IC003	8-759-070-96	CXA1481AQ
IC004	8-759-937-56	S-8054ALB-LM-S
IC005	8-759-941-78	S-8053ALB
IC006	8-759-990-07	TL1596CNS
IC007	8-759-720-45	CAT35C202K
IC010	8-759-513-72	PQ12RF11
IC011	8-759-513-73	PQ09RF11
IC301	8-759-983-69	LM358PS
IC302	8-759-823-94	LB1836M
IC304	8-759-990-55	CXA8006M
IC305	8-759-148-05	CXA8010M
IC405	8-759-700-43	NJM4558M
IC406	8-759-009-06	MC14052BF
IC407	8-759-700-43	NJM4558M
IC408	8-759-700-43	NJM4558M
IC601	8-752-052-58	CXA1410M
IC603	8-759-093-42	MC141625FU
IC605	8-759-069-28	PQ05RF11
IC701	8-759-710-07	NJM2234M
IC702	8-759-710-07	NJM2234M
IC704	8-752-334-49	CXD1172AM
IC705	8-752-334-49	CXD1172AM
IC706	8-759-514-85	CF45000PJ
IC707	8-759-514-86	CF45001PJ
IC708	8-759-243-19	TC7SU04F
IC709	8-752-340-75	CXK1206AM
IC710	8-759-300-71	HD14053BFP
IC711	8-759-300-71	HD14053BFP
IC901	8-759-056-34	M50555-054FP
IC902	8-759-631-10	M52684AFP
IC903	8-759-710-29	NJM2235M
IC904	8-759-710-86	NJM2233BM
IC905	8-759-300-71	HD14053BFP
IC906	8-759-057-40	MC14577BF
IC907	8-759-057-40	MC14577BF
IC908	8-759-057-40	MC14577BF
IC909	8-759-979-68	LM2931Z-5.0

< TRANSISTOR >

Q002	8-729-421-19	UN2213
Q003	8-729-140-98	2SD773-34
Q005	8-729-420-20	XN4312
Q006	8-729-403-24	XN4210
Q007	8-729-424-76	UN2210
Q008	8-729-424-18	UN2113
Q009	8-729-120-28	2SC1623-L5L6
Q010	8-729-421-19	UN2213
Q011	8-729-402-19	XN6501
Q012	8-729-420-20	XN4312
Q016	8-729-421-19	UN2213
Q018	8-729-421-19	UN2213
Q019	8-729-216-22	2SA1162-G
Q020	8-729-120-28	2SC1623-L5L6
Q021	8-729-424-08	UN2111
Q304	8-729-901-81	2SC2412K-T-146-R
Q305	8-729-421-19	UN2213
Q306	8-729-420-12	XN4213
Q307	8-729-120-28	2SC1623-L5L6
Q308	8-729-424-18	UN2113
Q309	8-729-231-60	2SD1406-YGR
Q310	8-729-231-60	2SD1406-YGR
Q312	8-729-901-81	2SC2412K-T-146-R
Q403	8-729-120-28	2SC1623-L5L6
Q404	8-729-922-87	2SD1757K-RS
Q407	8-729-216-22	2SA1162-G
Q408	8-729-922-87	2SD1757K-RS
Q409	8-729-922-87	2SD1757K-RS
Q410	8-729-120-28	2SC1623-L5L6
Q411	8-729-120-28	2SC1623-L5L6
Q412	8-729-421-90	XN4113
Q413	8-729-903-30	DTC144TK
Q414	8-729-903-30	DTC144TK
Q415	8-729-420-20	XN4312
Q416	8-729-120-28	2SC1623-L5L6
Q417	8-729-421-19	UN2213
Q418	8-729-421-19	UN2213
Q419	8-729-424-08	UN2111
Q420	8-729-421-19	UN2213
Q600	8-729-402-19	XN6501
Q601	8-729-216-22	2SA1162-G
Q602	8-729-120-28	2SC1623-L5L6
Q603	8-729-402-84	XN4601
Q604	8-729-421-19	UN2213
Q609	8-729-216-22	2SA1162-G
Q610	8-729-216-22	2SA1162-G
Q611	8-729-120-28	2SC1623-L5L6
Q612	8-729-402-19	XN6501
Q616	8-729-216-22	2SA1162-G
Q617	8-729-216-22	2SA1162-G
Q618	8-729-421-19	UN2213
Q620	8-729-421-19	UN2213
Q701	8-729-120-28	2SC1623-L5L6
Q702	8-729-402-19	XN6501
Q703	8-729-120-28	2SC1623-L5L6
Q704	8-729-402-19	XN6501
Q705	8-729-402-19	XN6501
Q706	8-729-216-22	2SA1162-G
Q707	8-729-216-22	2SA1162-G
Q708	8-729-402-19	XN6501
Q709	8-729-216-22	2SA1162-G
Q710	8-729-120-28	2SC1623-L5L6
Q711	8-729-402-19	XN6501
Q713	8-729-402-19	XN6501
Q714	8-729-120-28	2SC1623-L5L6
Q715	8-729-216-22	2SA1162-G
Q722	8-729-120-28	2SC1623-L5L6
Q723	8-729-216-22	2SA1162-G

ST-48 BOARD (CONDUCTOR SIDE)



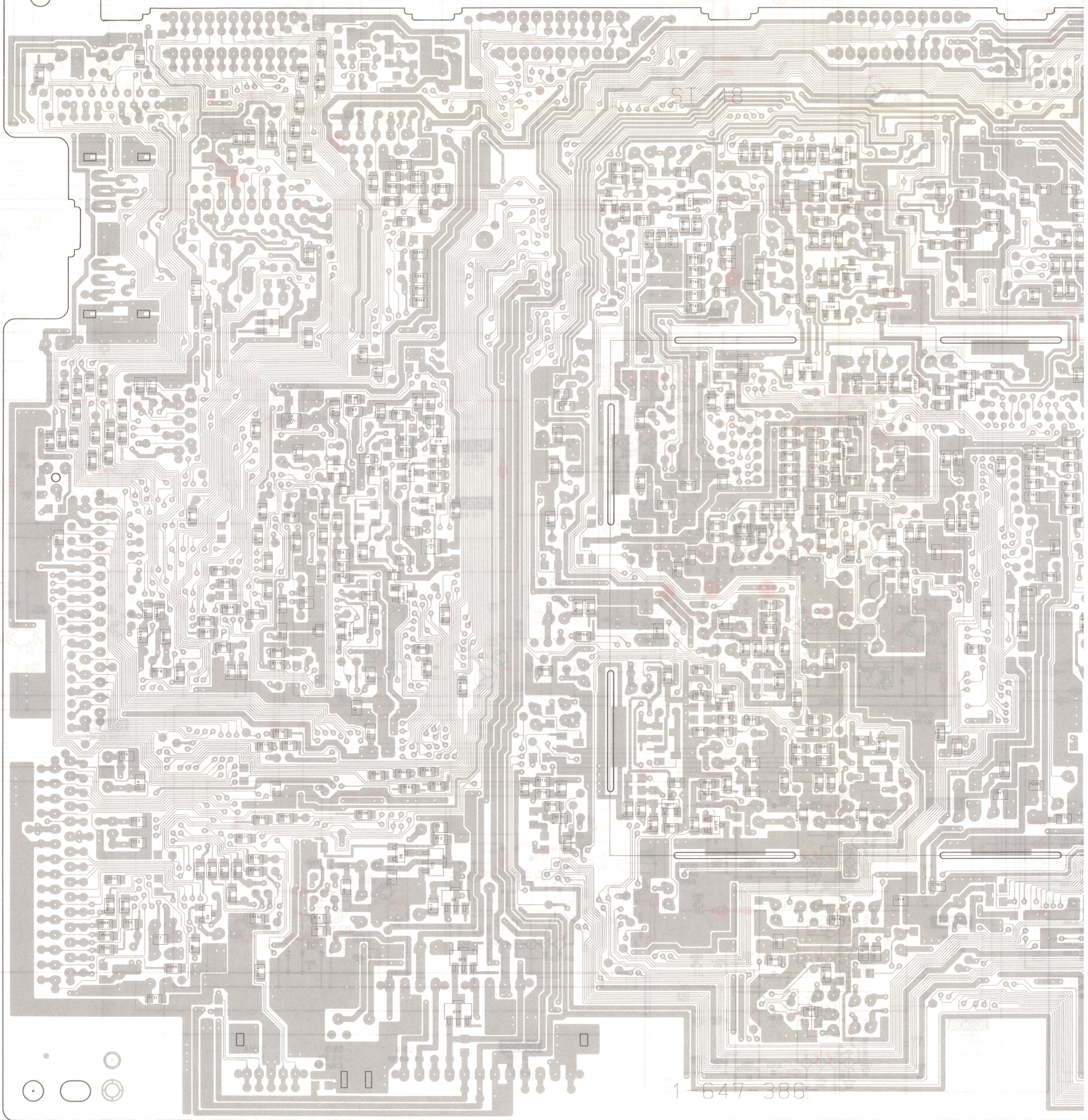
8-729-901-81 2SC2412K-T-146-R
8-729-120-28 2SC1623-L5L6
8-729-922-87 2SD1757K-RS
8-729-216-22 2SA1162-G
8-729-922-87 2SD1757K-RS
8-729-922-87 2SD1757K-RS
8-729-120-28 2SC1623-L5L6
8-729-120-28 2SC1623-L5L6
8-729-421-90 XN4113
8-729-903-30 DTC144TK
8-729-903-30 DTC144TK
8-729-420-20 XN4312
8-729-120-28 2SC1623-L5L6
8-729-421-19 UN2213
8-729-421-19 UN2213
8-729-424-08 UN2111
8-729-421-19 UN2213
8-729-402-19 XN6501
8-729-216-22 2SA1162-G
8-729-120-28 2SC1623-L5L6
8-729-402-84 XN4601
8-729-421-19 UN2213
8-729-216-22 2SA1162-G

Q610 8-729-216-22 2SA1162-G
Q611 8-729-120-28 2SC1623-L5L6
Q612 8-729-402-19 XN6501
Q616 8-729-216-22 2SA1162-G
Q617 8-729-216-22 2SA1162-G
Q618 8-729-421-19 UN2213
Q620 8-729-421-19 UN2213
Q701 8-729-120-28 2SC1623-L5L6
Q702 8-729-402-19 XN6501
Q703 8-729-120-28 2SC1623-L5L6
Q704 8-729-402-19 XN6501
Q705 8-729-402-19 XN6501
Q706 8-729-216-22 2SA1162-G
Q707 8-729-216-22 2SA1162-G
Q708 8-729-402-19 XN6501
Q709 8-729-216-22 2SA1162-G
Q710 8-729-120-28 2SC1623-L5L6
Q711 8-729-402-19 XN6501
Q713 8-729-402-19 XN6501
Q714 8-729-120-28 2SC1623-L5L6
Q715 8-729-216-22 2SA1162-G
Q722 8-729-120-28 2SC1623-L5L6
Q723 8-729-216-22 2SA1162-G

Q724 8-729-120-28 2SC1623-L5L6
Q726 8-729-120-28 2SC1623-L5L6
Q727 8-729-216-22 2SA1162-G
Q728 8-729-120-28 2SC1623-L5L6
Q729 8-729-120-28 2SC1623-L5L6
Q730 8-729-120-28 2SC1623-L5L6
Q731 8-729-424-08 UN2111
Q732 8-729-402-19 XN6501
Q733 8-729-120-28 2SC1623-L5L6
Q734 8-729-120-28 2SC1623-L5L6
Q735 8-729-216-22 2SA1162-G
Q736 8-729-120-28 2SC1623-L5L6
Q737 8-729-421-19 UN2213
Q738 8-729-402-19 XN6501
Q739 8-729-402-84 XN4601
Q740 8-729-402-84 XN4601
Q741 8-729-402-84 XN4601
Q742 8-729-120-28 2SC1623-L5L6
Q743 8-729-202-38 2SC3326N
Q749 8-729-216-22 2SA1162-G
Q752 8-729-902-99 DTC114TK
Q753 8-729-216-22 2SA1162-G
Q755 8-729-421-19 UN2213

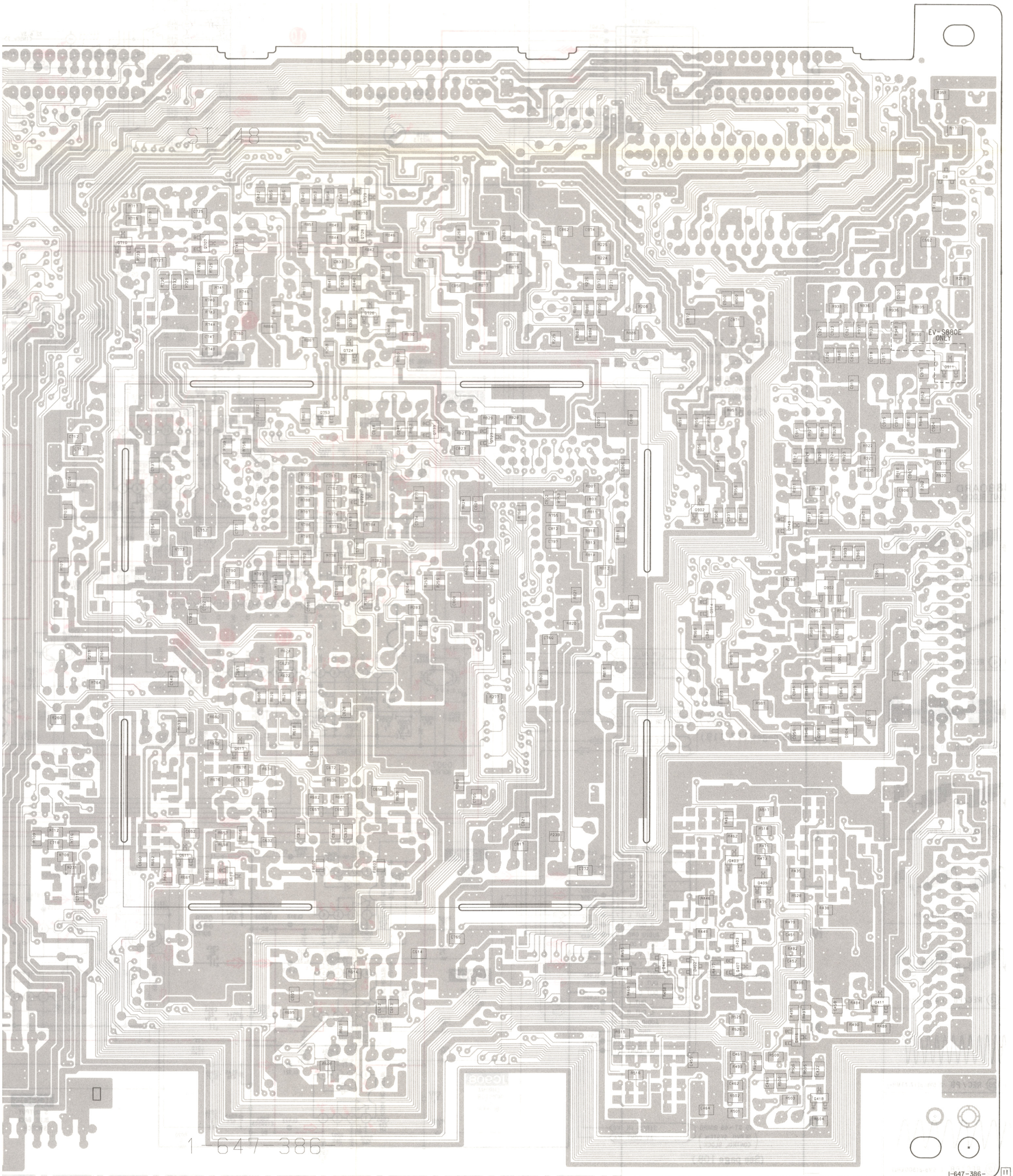
Q756 8-729-421-22 UN2211
Q757 8-729-403-24 XN4210
Q901 8-729-216-22 2SA1162-G
Q902 8-729-216-22 2SA1162-G
Q906 8-729-402-84 XN4601
Q907 8-729-402-84 XN4601
Q908 8-729-216-22 2SA1162-G
Q911 8-729-120-28 2SC1623-L5L6 (EV-S880E)
Q914 8-729-216-22 2SA1162-G
Q915 8-729-402-84 XN4601
Q916 8-729-216-22 2SA1162-G
Q917 8-729-402-84 XN4601
Q918 8-729-402-84 XN4601
Q930 8-729-216-22 2SA1162-G
Q931 8-729-120-28 2SC1623-L5L6

ST-48 BOARD (CONDUCTOR SIDE)

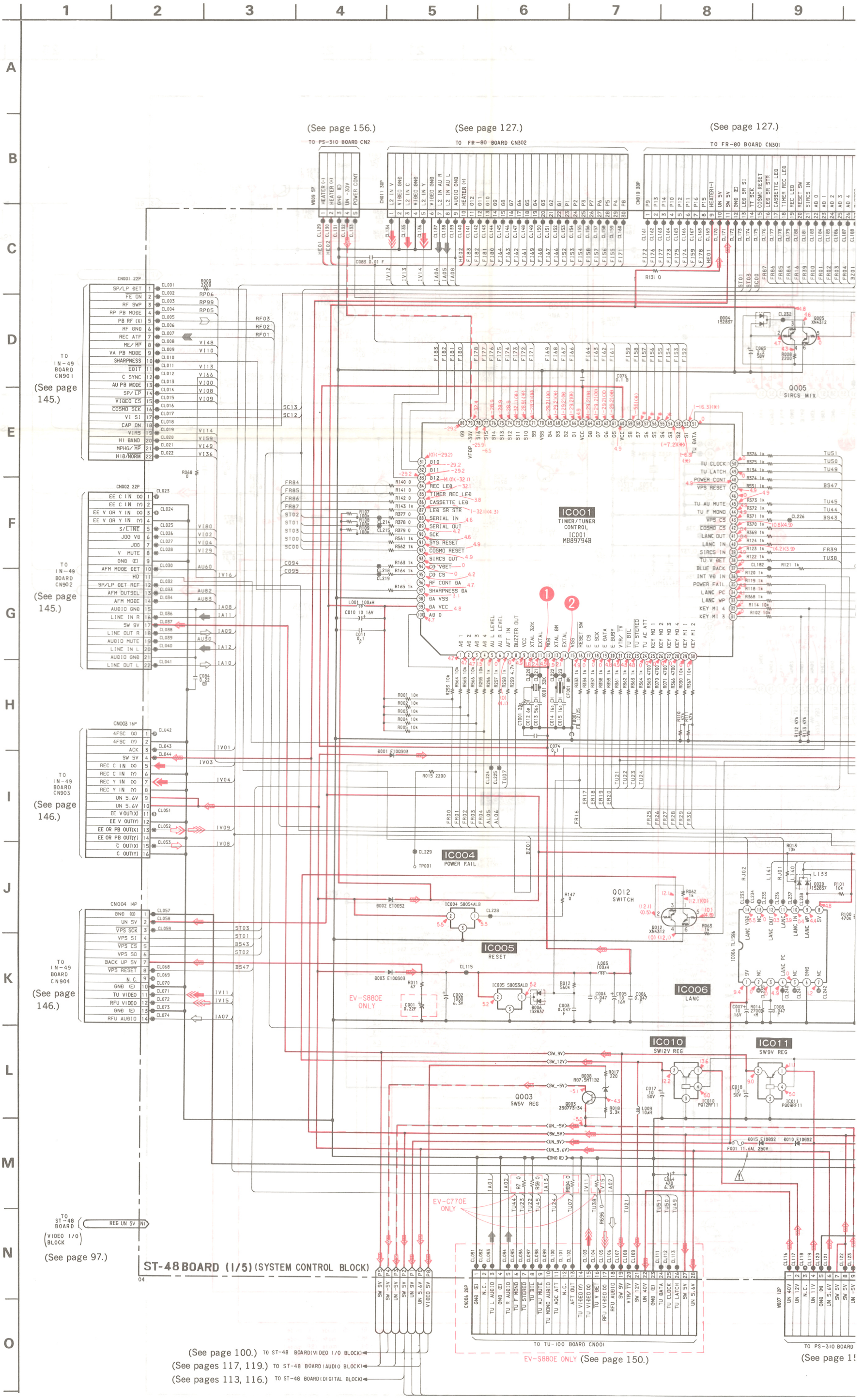


-729-120-28 2SC1623-L5L6
-729-120-28 2SC1623-L5L6
-729-216-22 2SA1162-G
-729-120-28 2SC1623-L5L6
-729-120-28 2SC1623-L5L6
-729-120-28 2SC1623-L5L6
-729-424-08 UN2111
-729-402-19 XN6501
-729-120-28 2SC1623-L5L6
-729-120-28 2SC1623-L5L6
-729-216-22 2SA1162-G
-729-120-28 2SC1623-L5L6
-729-421-19 UN2213
-729-402-19 XN6501
-729-402-84 XN4601
-729-402-84 XN4601
-729-402-84 XN4601
-729-120-28 2SC1623-L5L6
-729-202-38 2SC3326N
-729-216-22 2SA1162-G
-729-902-99 DTC114TK
-729-216-22 2SA1162-G
-729-421-19 UN2213

Q756 8-729-421-22 UN2211
Q757 8-729-403-24 XN4210
Q901 8-729-216-22 2SA1162-G
Q902 8-729-216-22 2SA1162-G
Q906 8-729-402-84 XN4601
Q907 8-729-402-84 XN4601
Q908 8-729-216-22 2SA1162-G
Q911 8-729-120-28 2SC1623-L5L6 (EV-S880E)
Q914 8-729-216-22 2SA1162-G
Q915 8-729-402-84 XN4601
Q916 8-729-216-22 2SA1162-G
Q917 8-729-402-84 XN4601
Q918 8-729-402-84 XN4601
Q930 8-729-216-22 2SA1162-G
Q931 8-729-120-28 2SC1623-L5L6



27 28 29 30 31 32 33 34 35 36 37 38 39

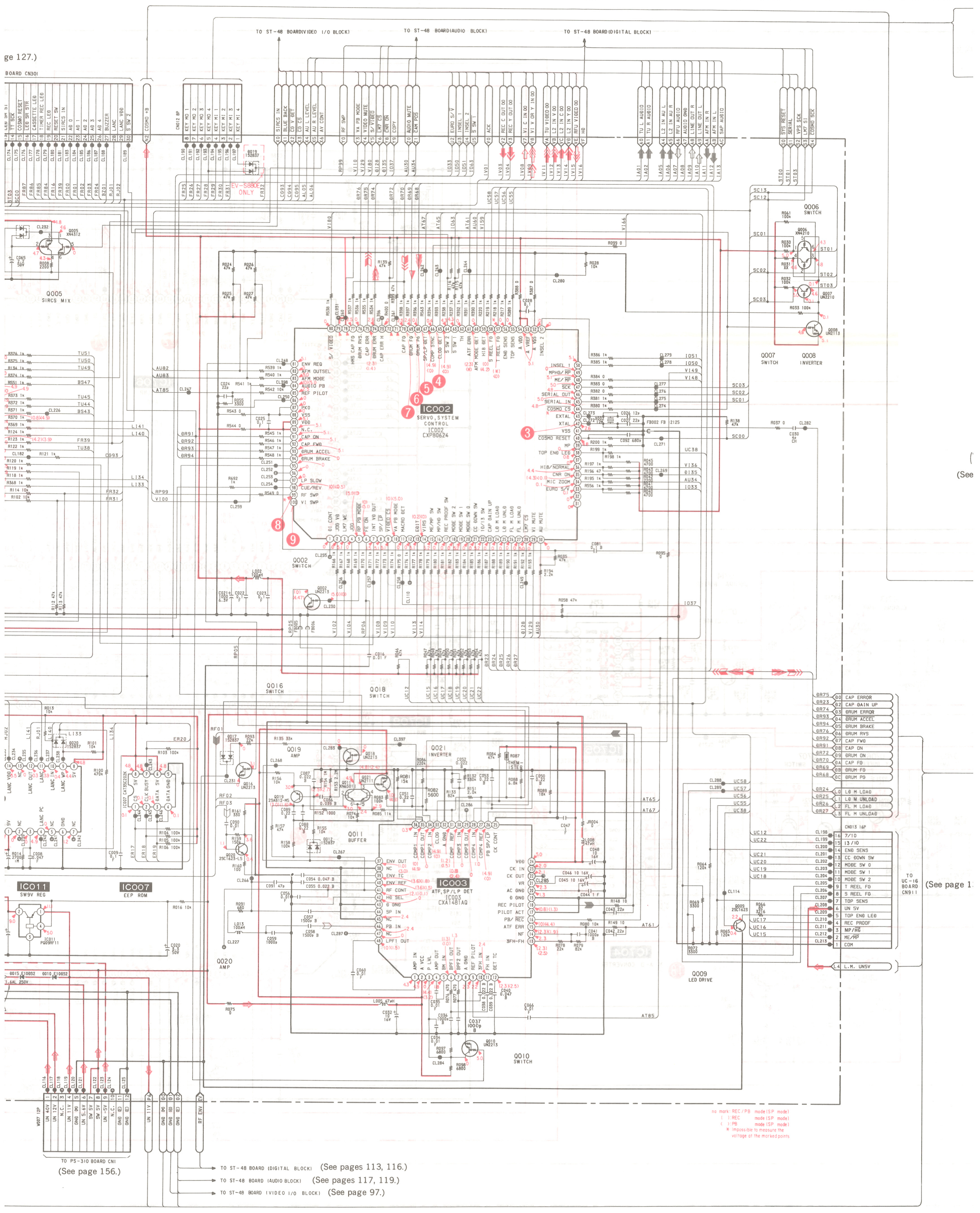


ST-48 BOARD
(SERVO, SYSTEM CONTROL BLOCK)

1. IC001 (11) REC/PB 5.0Vp-p(32kHz)
2. IC001 (14) REC/PB 5.0Vp-p(8MHz)
3. IC002 (42) REC/PB 3.6Vp-p(12MHz)
4. IC002 (66) REC/PB 5.0Vp-p(H)
5. IC002 (68) REC/PB 5.0Vp-p(40ms)
6. IC002 (69) REC/PB 5.0Vp-p(300Hz)
7. IC002 (70) REC/PB 4.8Vp-p(1.33kHz)
8. IC002 (99) REC/PB 4.8Vp-p(40ms)
9. IC002 (100) REC/PB 4.8Vp-p(40ms)

(See pages 97, 98, 99, 100.) (See pages 117, 119.) (See pages 113, 116.)

ge 127.)



SWITCH BLOCK (EV-S880E)

KEYMAT OUT 1 1
KEYMAT OUT 2 2
KEYMAT OUT 3 3
KEYMAT OUT 4 4
KEYMAT IN 1 5
KEYMAT IN 2 6
KEYMAT IN 3 7
KEYMAT IN 4 8
CN001 8P

TIMER REC (ON/OFF) S101
INPUT SELECT S102
TAPE SPEED (SP/LP) S103
COUNTER RESET S104
● REC S201
TIMER CHECK S202
QUICK TIMER S203
VB (VOICE BOOST) S204
PROGRAM + S301
PROGRAM — S302
VPS S303
SYNCHRO EDIT S401
EDIT S402
TV/VTR S403

SWITCH BLOCK (EV-C770E)

KEYMAT OUT 1 1
KEYMAT OUT 2 2
KEYMAT OUT 3 3
KEYMAT OUT 4 4
KEYMAT IN 1 5
KEYMAT IN 2 6
KEYMAT IN 3 7
KEYMAT IN 4 8
CN001 8P

SYNCHRO EDIT S101
INPUT SELECT S102
TAPE SPEED (SP/LP) S103
● REC S201
EDIT S202
VB (VOICE BOOST) S403
COUNTER RESET S304

SYS RESET S0
SERIAL S1
VPS SCK S2
LM7 SI S3
COSMO SCK S4
ST00
ST01
ST03

Q006 SWITCH
Q007 SWITCH
Q008 INVERTER

ST-48 BOARD (1/5) (SERVO BLOCK)

TO ST-48 BOARD (VIDEO I/O BLOCK)
(See page 100.)

UN 9V P7
COSMO +B N2
UN 11V P6
GND (M) G0
GND (E) G2
UN 5.6V P0
UN 9V P1
SW 5V P2

CAP ERROR B0
CAP GAIN UP B2
DRUM ERROR B3
DRUM ACCEL B4
DRUM BRAKE B5
DRUM RVS B6
CAP FWD B7
CAP ON B8
DRUM ON B9
CAP FG BA
DRUM FG BB
DRUM PG BC

L0 M LOAD L0
LD M UNLOAD L1
FL M LOAD L2
FL M UNLOAD L3
L.M. UNSV L4

CN013 16P
CL198 16 7/10
CL199 15 13/10
CL200 14 END SENS
CL201 13 CC DOWN SW
CL202 12 MODE SW 0
CL203 11 MODE SW 1
CL204 10 MODE SW 2
CL205 9 T REEL FG
CL206 8 S REEL FG
CL207 7 TOP SENS
CL208 6 UN 5V
CL209 5 TOP END LED
CL210 4 REC PROOF
CL211 3 MP/HG
CL212 2 ME/MP
CL213 1 COM

TO UC-16 BOARD CN911
(See page 138.)

Q307 REG
Q309 CURRENT DRIVE
Q304 BUFFER
POWER TR
Q305 GAIN SWITCH
IC301 CAPSTAN ERROR AMP
Q312 BUFFER
Q308 DRUM ACCEL SWITCH
Q310 CURRENT DRIVE
Q306 DRUM BRAKE SWITCH
IC302 MOTOR DRIVE
IC304 DRUM MOTOR DRIVE
IC305 FG/PG WAVE SHAPER

22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32

BLOCK (EV-S880E)

TIMER REC (ON/OFF) S101 | INPUT SELECT S102 | TAPE SPEED (SP/LP) S103 | COUNTER RESET S104

● REC S201 | TIMER CHECK S202 | QUICK TIMER S203 | VB (VOICE BOOST) S204

PROGRAM + S301 | PROGRAM − S302 | VPS S303

SYNCHRO EDIT S401 | EDIT S402 | TV/VTR S403

SWITCH BLOCK (EV-C770E)

KEYMAT OUT 1 1
KEYMAT OUT 2 2
KEYMAT OUT 3 3
KEYMAT OUT 4 4
KEYMAT IN 1 5
KEYMAT IN 2 6
KEYMAT IN 3 7
KEYMAT IN 4 8
CN001 8P

SYNCHRO EDIT S101 | INPUT SELECT S102 | TAPE SPEED (SP/LP) S103

● REC S201 | EDIT S202

VB (VOICE BOOST) S403 | COUNTER RESET S304

• **Signal path**

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	⇨	⇨	⇨	⇨

• **Signal path**

	REC	REC/PB	PB
Drum speed servo		▷	
Drum phase servo		▷	
Drum servo(speed and phase)		▷	
Capstan speed servo		▷	
Capstan phase servo	▶	▷	▷
Capstan servo(speed and phase)		▷	
Ref.signal	▶	▷	▷

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

8 BOARD (1/5) (SERVO BLOCK)

Q307 REG | Q309 CURRENT DRIVE | POWER TR | Q304 BUFFER | Q305 GAIN SWITCH

IC301 CAPSTAN ERROR AMP (IC301 LM358PS)

IC304 DRUM MOTOR DRIVE (IC304 CXA8006M)

Q312 BUFFER | Q310 CURRENT DRIVE | POWER TR | Q308 DRUM ACCEL SWITCH | Q306 DRUM BRAKE SWITCH

IC302 MOTOR DRIVE (IC302 LB1836M)

IC305 FG/PG WAVE SHAPER (IC305 CXA8010M)

CN301 9P

CL327	1	GND (M)
CL328	2	UN 9V
CL329	3	CAP VS
CL330	4	CAP FWD
CL331	5	CAP ON
CL332	6	CFG GND
CL333	7	CFG VCC
CL334	8	CFG (B)
CL335	9	CFG (A)

TO CC−78 BOARD CN921
(See page 137.)

CN302 14P

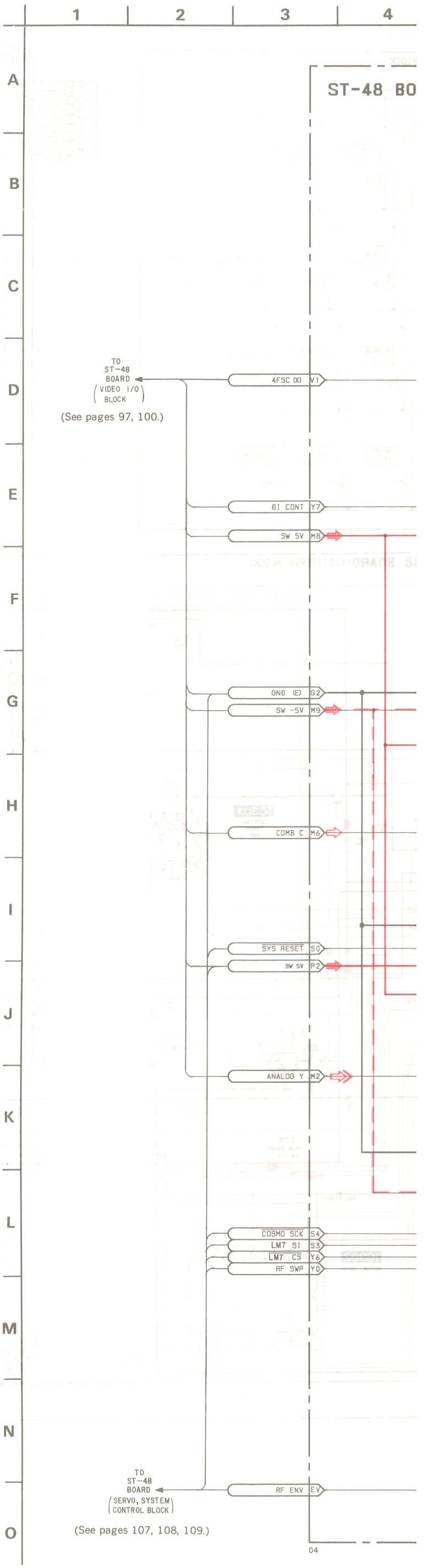
CL336	1	FL LOAD
CL337	2	FL UNLOAD
CL338	3	LD LOAD
CL339	4	LD UNLOAD
CL340	5	GND
CL341	6	PG (+)
CL342	7	PG (COM)
CL343	8	FG (+)
CL344	9	FG (COM)
CL345	10	GND
CL346	11	ØRM COM
CL347	12	ØRM W
CL348	13	ØRM V
CL349	14	ØRM U

TO DC−53 BOARD CN932
(See page 138.)

no mark : REC/PB mode (SP mode)
( ) : REC mode (SP mode)
〈 〉 : PB mode (SP mode)
* Impossible to measure the voltage at the marked points

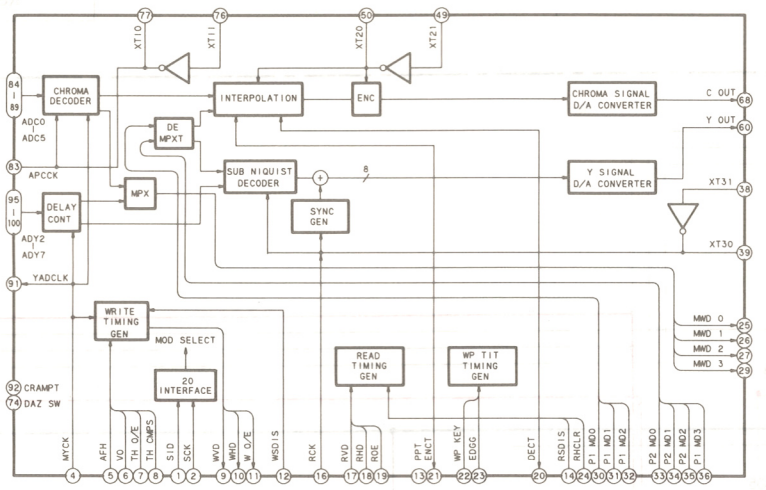
ST-48 (DIGITAL) SCHEMATIC DIAGRAM

—Ref. No. ST-48 BOARD : 3000 series—

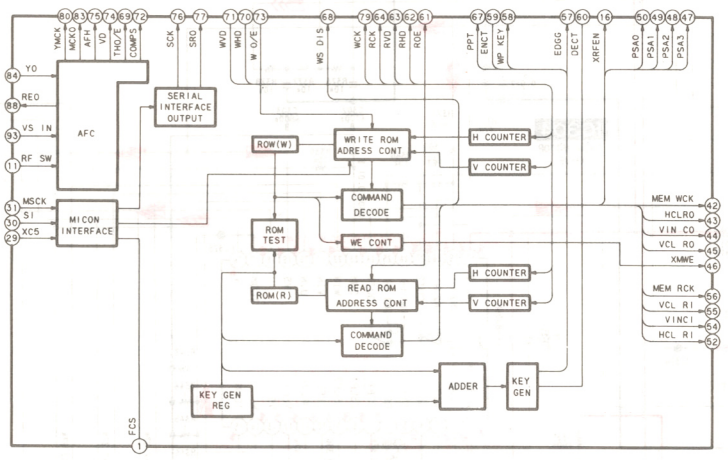


• ST-48 BOARD DIGITAL BLOCK IC BLOCK DIAGRAM

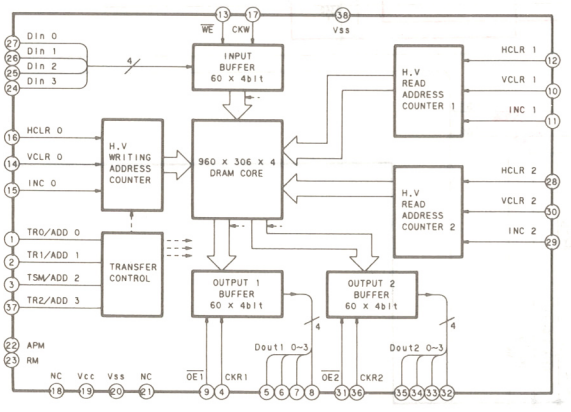
IC706
CF45000PJ



IC707
CF45001PJ



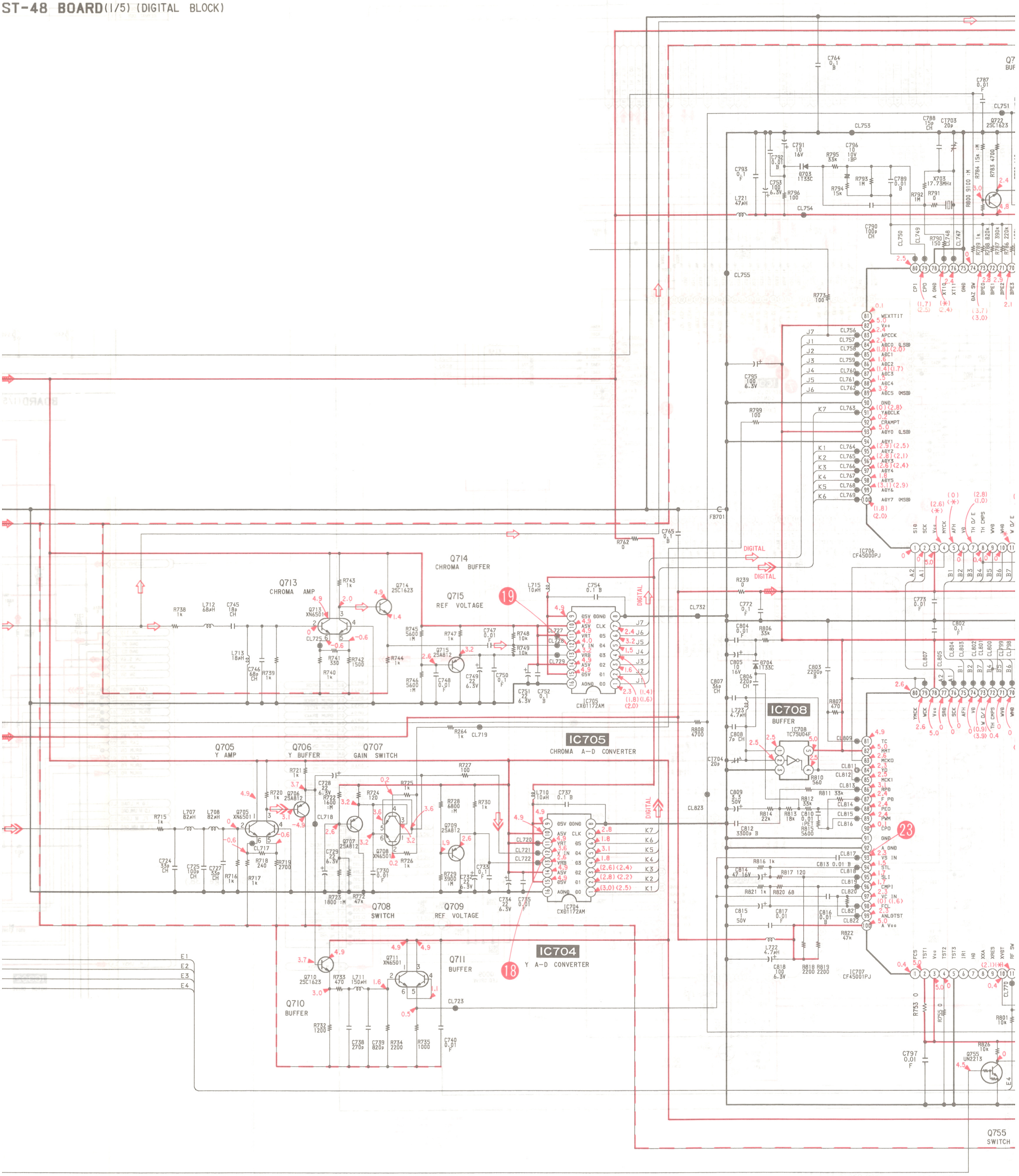
IC709
CXK1206M

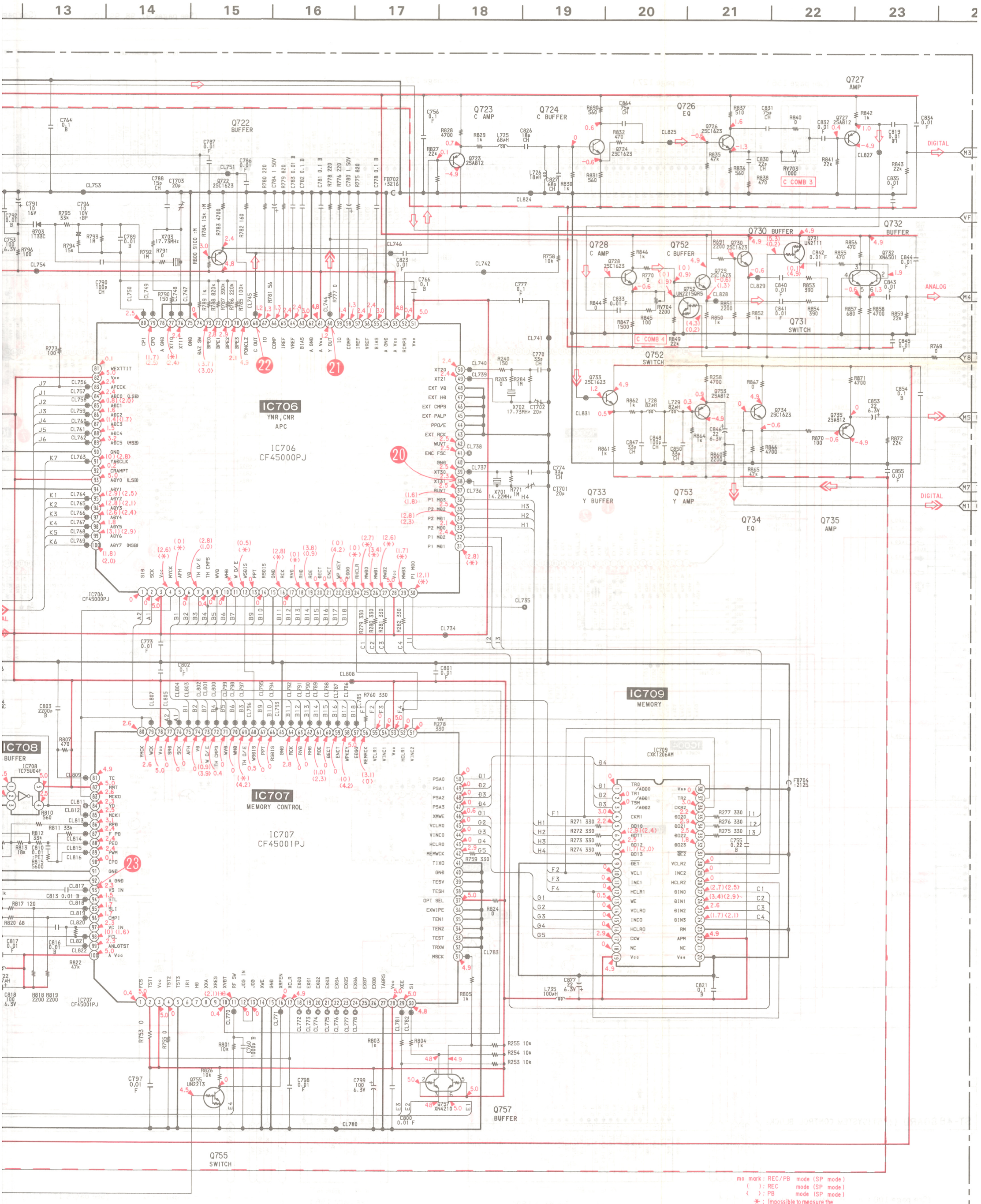


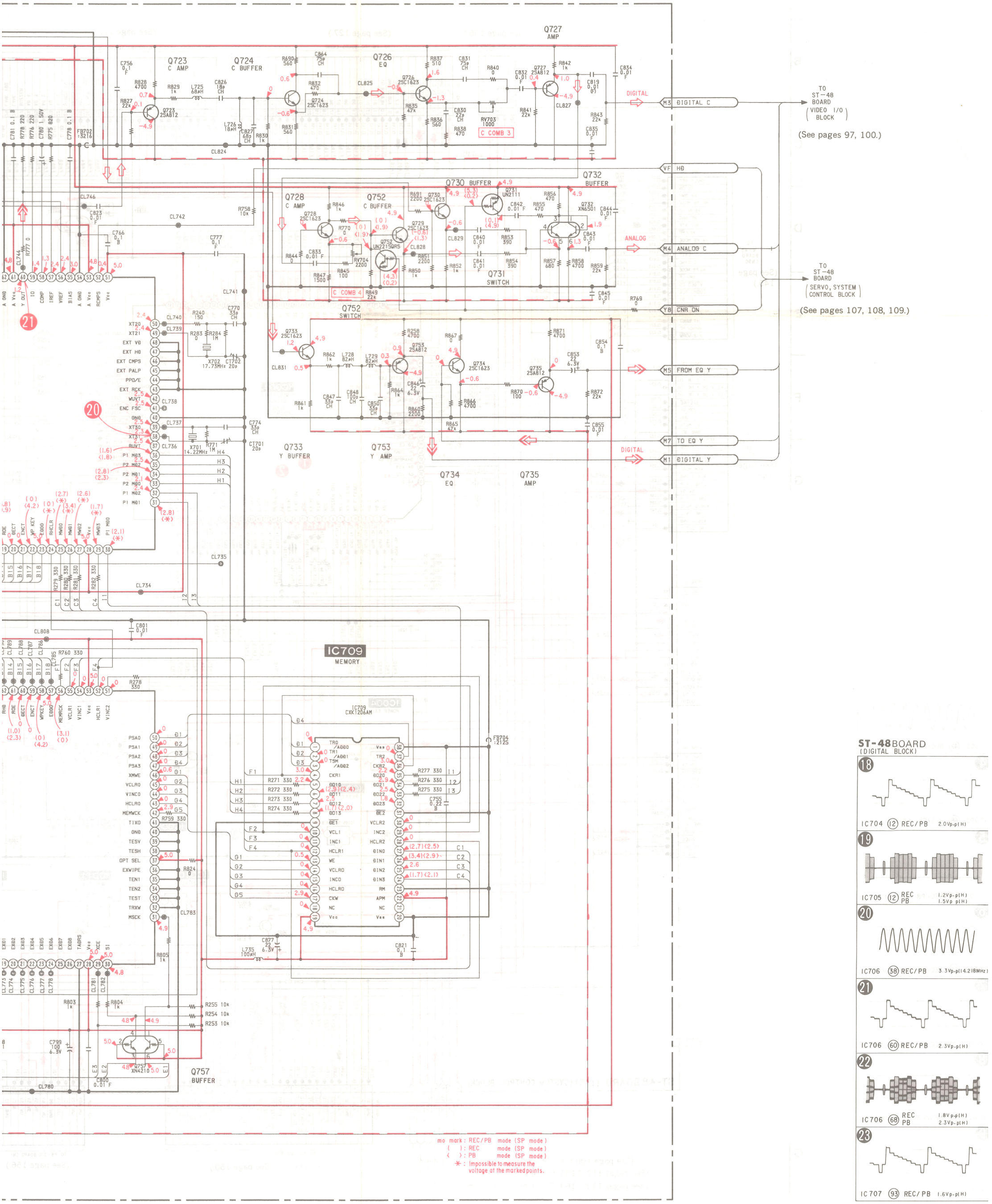
• Signal path

	VIDEO Signal		
	CHROMA	Y	Y/CHROMA
REC	➡	➡	➡
PB	⇨	⇨	⇨

ST-48 BOARD(1/5) (DIGITAL BLOCK)



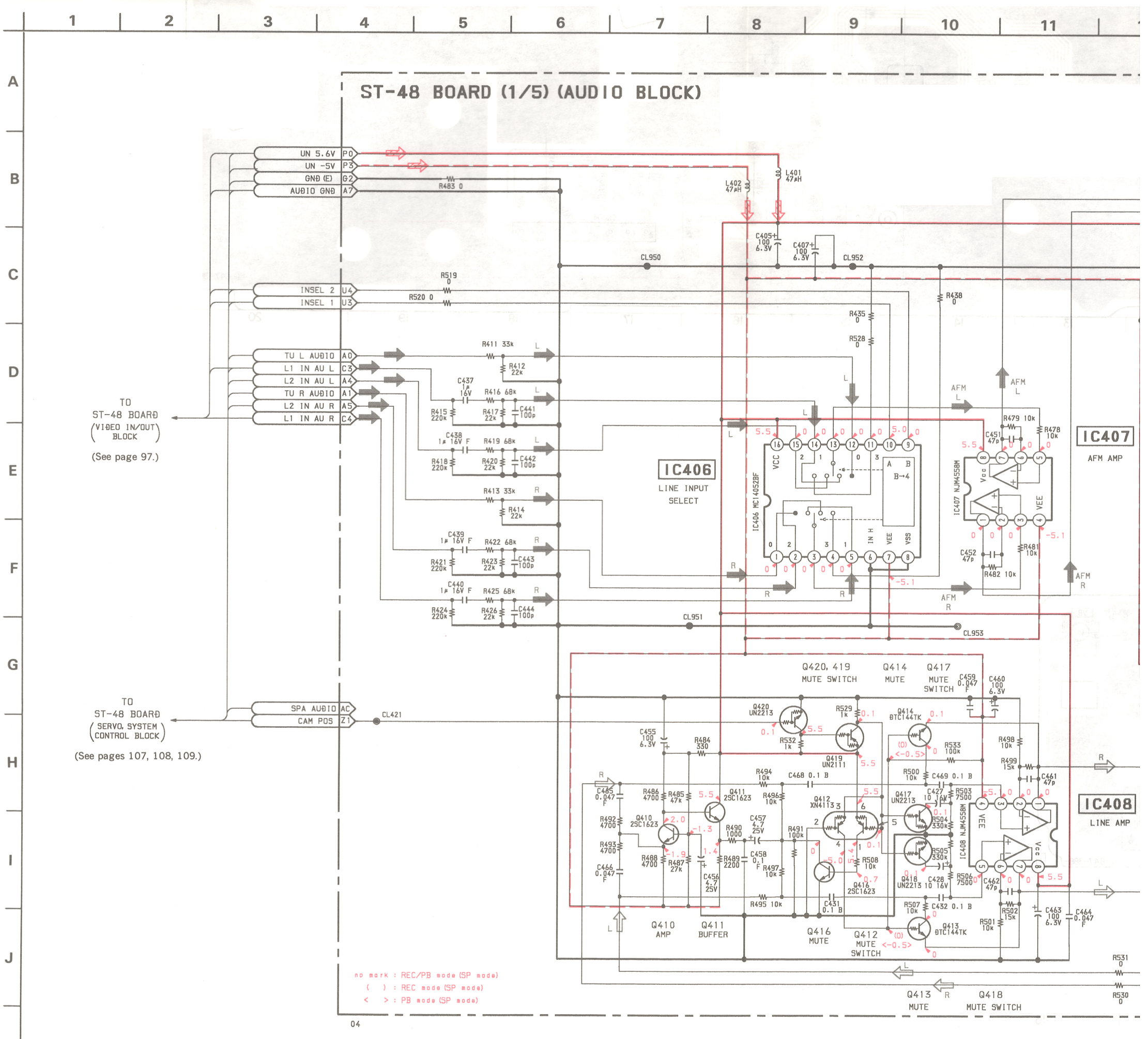

13
14
15
16
17
18
19
20
21
22
23
Q722
BUFFER
Q723
C AMP
Q724
C BUFFER
Q726
EQ
Q727
AMP
Q728
C AMP
Q730 BUFFER
Q731
SWITCH
Q732
BUFFER
Q752
C BUFFER
Q752
SWITCH
Q733
Y BUFFER
Q734
EQ
Q735
AMP
Q753
Y AMP
C COMB 3
C COMB 4
RV703
1000
RV704
2200
DIGITAL
ANALOG
DIGITAL
IC706
YNR, CNR
APC
IC706
CF45000PJ
IC707
MEMORY CONTROL
IC707
CF45001PJ
IC708
BUFFER
IC709
MEMORY
IC709
CXK1206AM
Q755
SWITCH
Q757
BUFFER
X703
17.73MHz
X702
17.73MHz
X701
14.22MHz
mo mark : REC/PB mode (SP mode)
( ) : REC mode (SP mode)
〈 〉 : PB mode (SP mode)
✳ : Impossible to measure the voltage at the marked points.



ST-48 BOARD (DIGITAL BLOCK)

ST-48 (AUDIO) SCHEMATIC DIAGRAM

—Ref. No. ST-48 BOARD : 3000 series—



11 12 13 14 15 16 17 18 19

IC405
AUDIO LEVEL AMP

IC407
AFM AMP

IC408
LINE AMP

Q403
RFU MIX BUFFER

Q404
MUTE

Q407
MUTE SWITCH

Q408
MUTE

Q409
MUTE

Q415
MUTE SWITCH

AFM L
AFM R

AB AFM IN L
AA AFM IN R

TO ST-48 BOARD (SERVO SYSTEM CONTROL BLOCK)
(See pages 107, 108, 109.)

X4 AU L LEVEL
X5 AU R LEVEL
C5 MONITOR OUT L
C6 MONITOR OUT R
A6 RFU AUDIO

TO ST-48 BOARD (VIDEO IN/OUT BLOCK)
(See page 97.)

P5 SW +9V
Z0 AUDIO MUTE

C7 LINE OUT L
C8 LINE OUT R

A9 LINE OUT L
A8 LINE OUT R

• Signal path

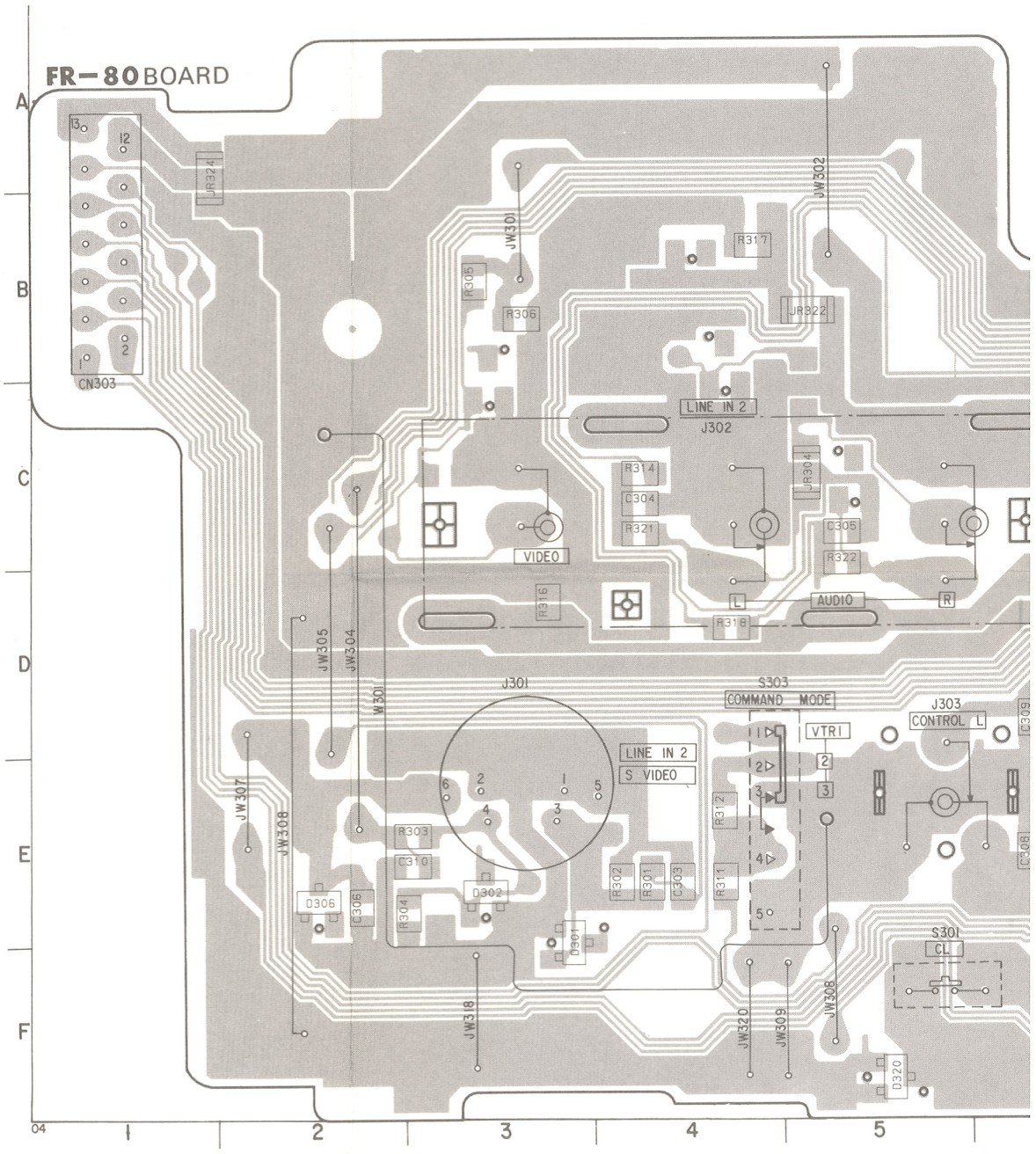
	AUDIO Signal
REC	➡
PB	⇨

• **Signal path**

	AUDIO Signal
REC	➡
PB	⇨

FL-54 (LED, FUNCTION), FR-80 (INPUT, FUNCTION) PRINTED WIRING BOARDS

—Ref. No. FL-54 and FR-80 BOARDS : 4000 series—

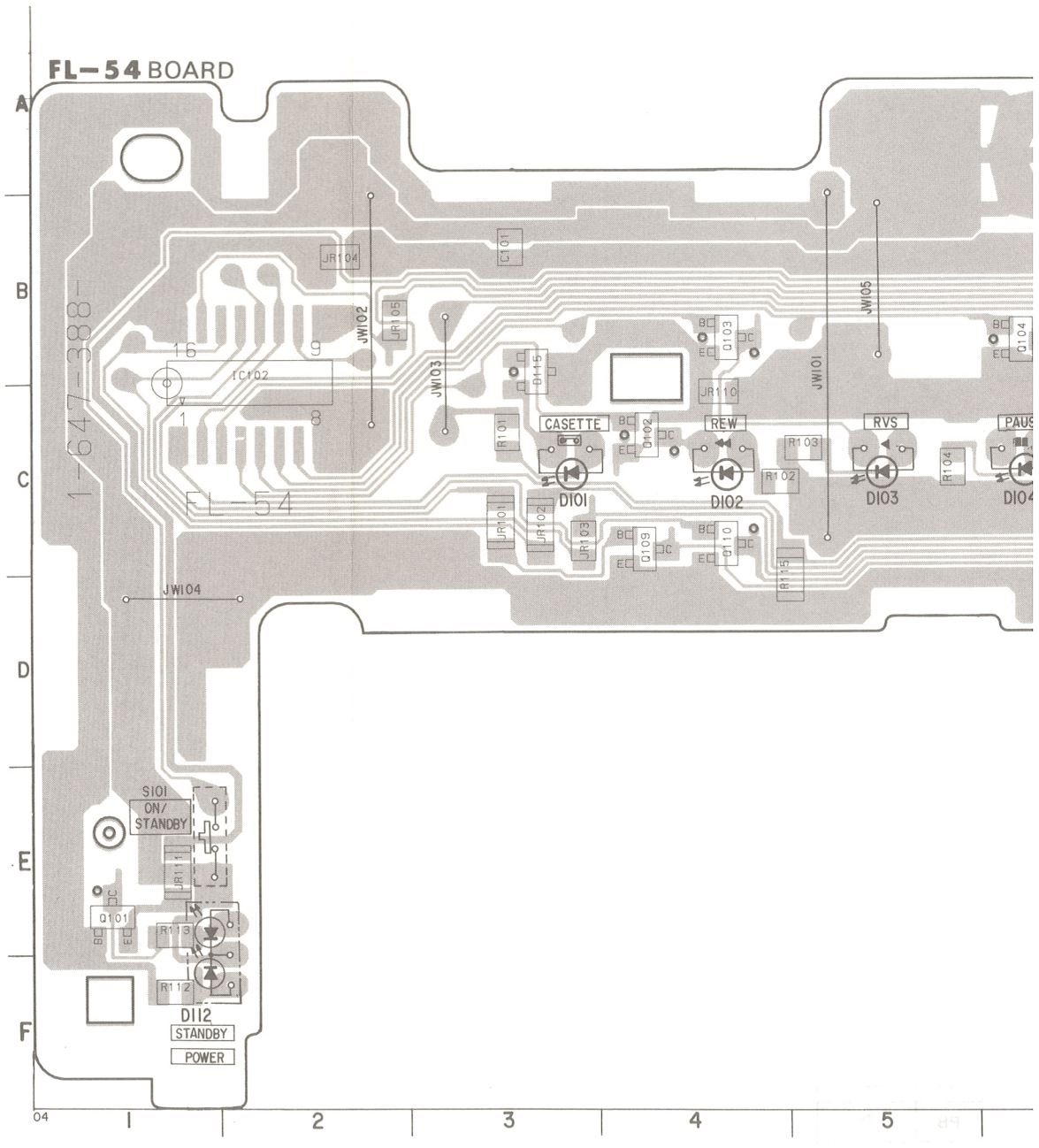


FR-80 BOARD

D301	F-3
D302	F-3
D305	E-6
D306	F-2
D308	E-6
D320	F-5

< DIODE >

D301	8-719-420-81 MA3075WA
D302	8-719-420-81 MA3075WA
D305	8-719-105-99 RD6.2M-B1
D306	8-719-105-90 RD5.6M-B1
D308	8-719-105-99 RD6.2M-B1
D320	8-719-106-43 RD9.1M-B1



FL-54 BOARD

D101	C-3
D102	C-4
D103	C-5
D104	C-6
D105	C-6
D106	C-7
D107	C-9
D108	C-8
D109	C-13
D110	C-12
D111	C-11
D112	E-1
D114	B-8
D115	B-3
D116	C-8
IC101	C-10
IC102	B-2
Q101	E-1
Q102	C-4
Q103	B-4
Q104	B-6
Q105	B-6
Q106	C-8
Q107	C-8
Q109	C-4
Q110	C-4

< DIODE >

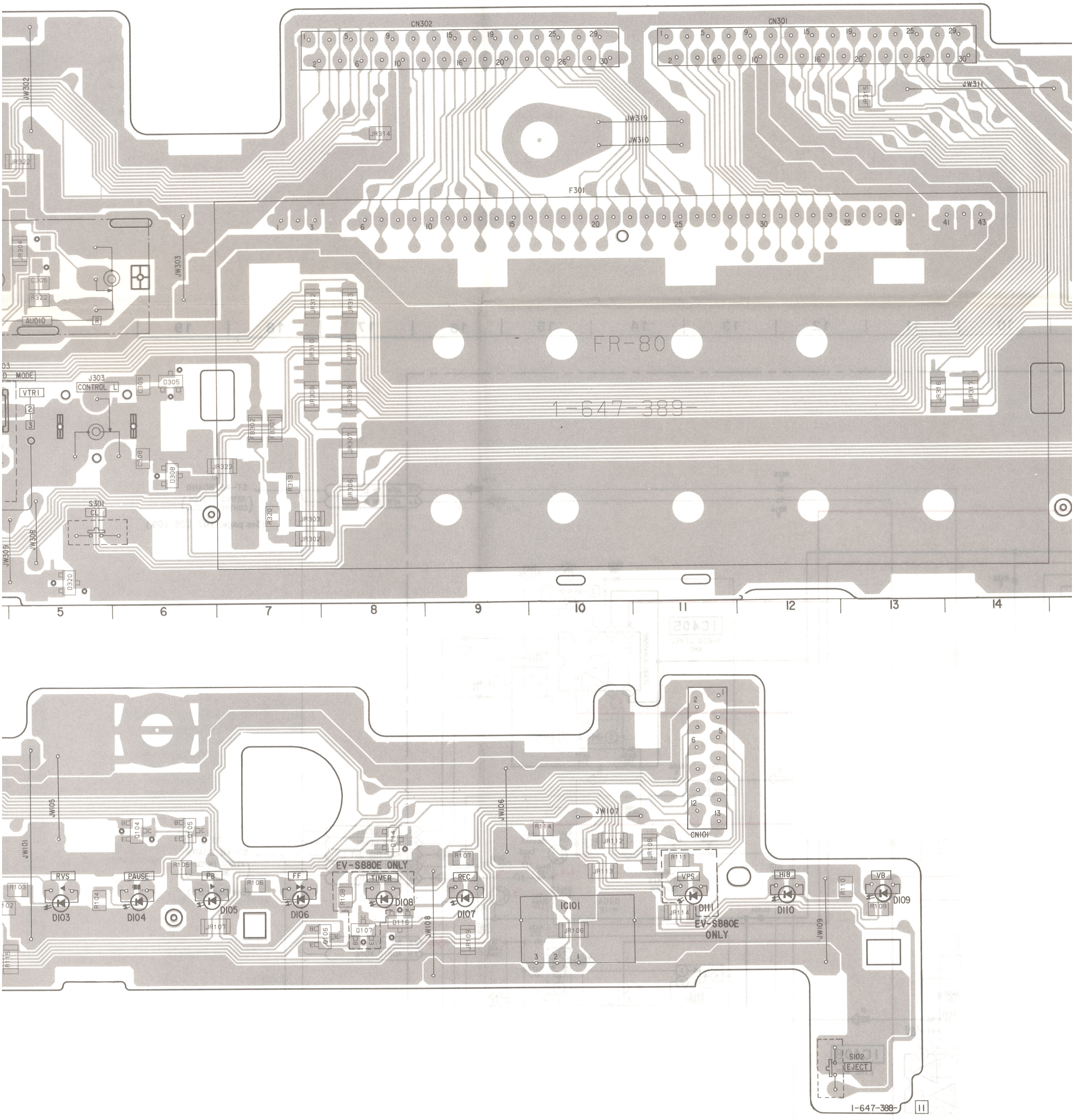
D101	8-719-955-04 PY5504S-1 (CASSETTE)
D102	8-719-802-02 TLY113AP (REW)
D103	8-719-955-04 PY5504S-1 (RVS)
D104	8-719-302-07 SEL1810A (PAUSE)
D105	8-719-955-04 PY5504S-1 (PB)
D106	8-719-802-02 TLY113AP (FF)
D107	8-719-921-01 EBR5534S (REC)
D108	8-719-921-01 EBR5534S (TIMER) (EV-S880E)
D109	8-719-802-02 TLY113AP (VB)
D110	8-719-955-04 PY5504S-1 (Hi8)
D111	8-719-802-02 TLY113AP (VPS) (EV-S880E)
D112	8-719-981-49 GL3ED8 (POWER/STANDBY)
D114	8-719-400-18 MA152WK
D115	8-719-400-18 MA152WK
D116	8-719-400-18 MA152WK

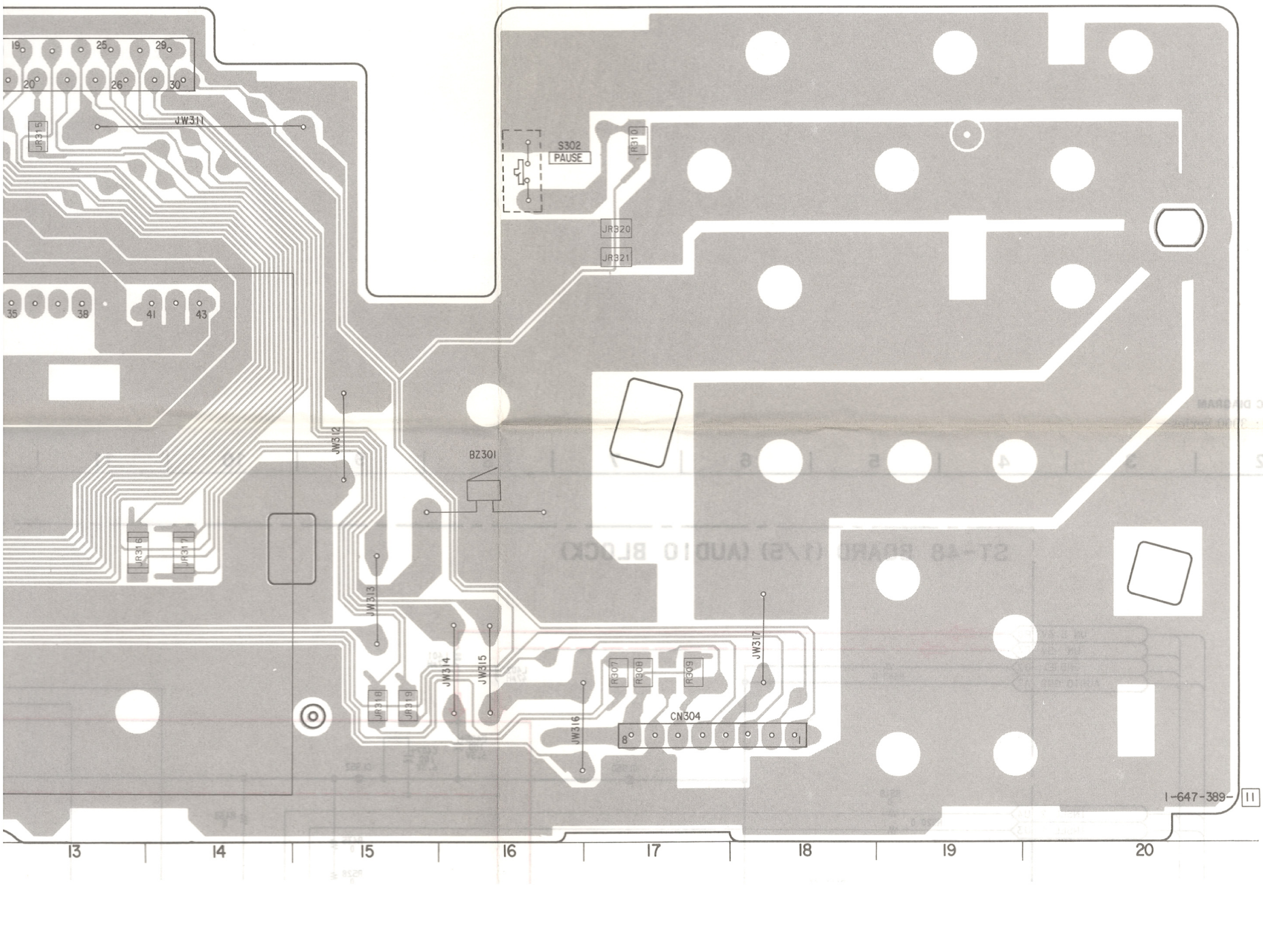
< IC >

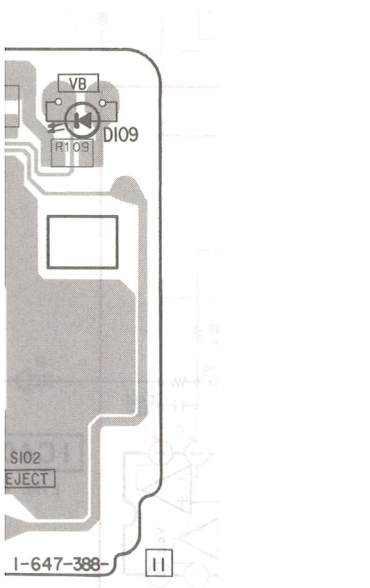
IC101	8-741-100-47 SBX1610-09
IC102	8-759-009-22 MC14094BF

< TRANSISTOR >

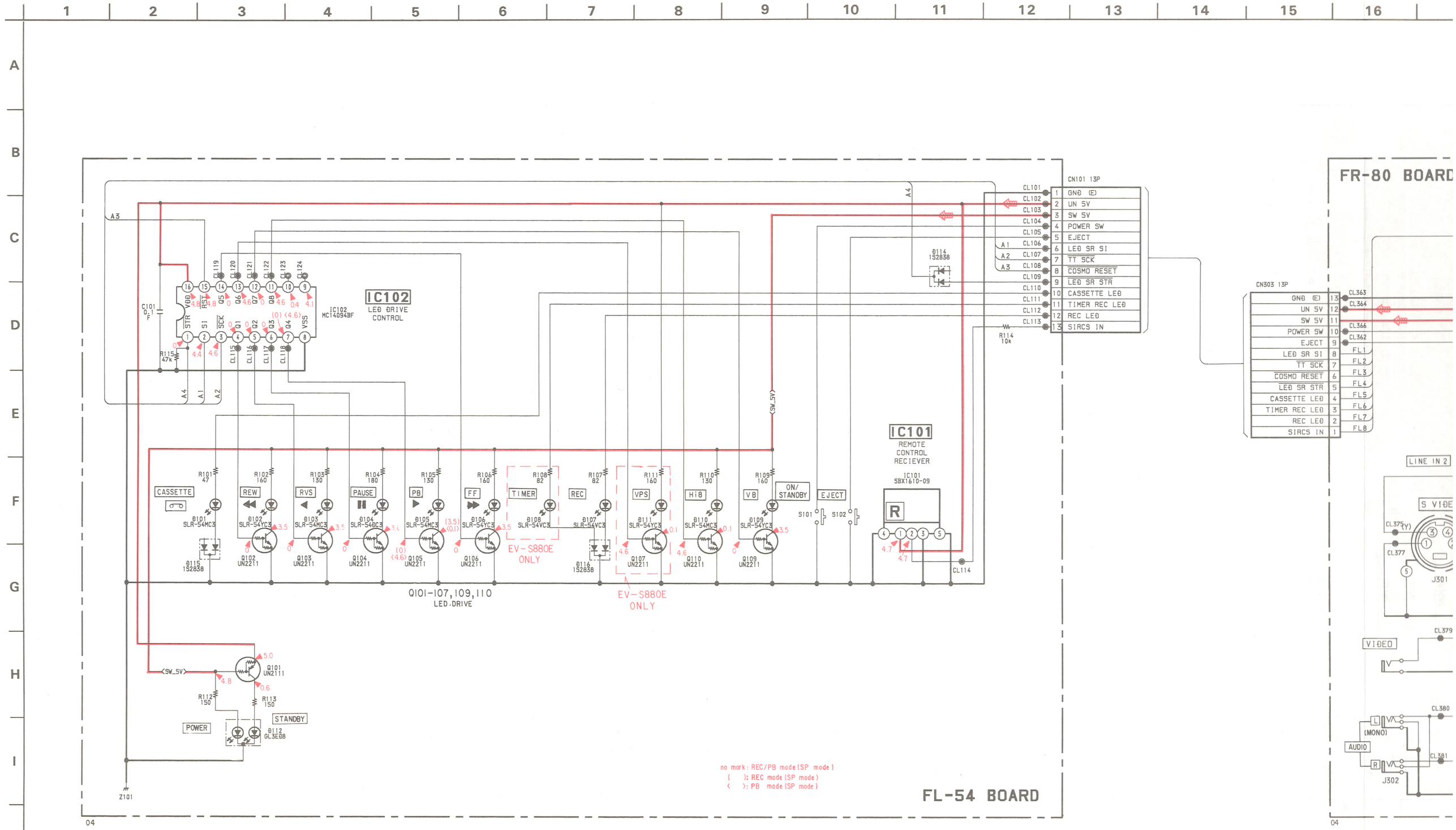
Q101	8-729-424-08 UN2111
Q102	8-729-421-22 UN2211
Q103	8-729-421-22 UN2211
Q104	8-729-421-22 UN2211
Q105	8-729-421-22 UN2211
Q106	8-729-421-22 UN2211
Q107	8-729-421-22 UN2211 (EV-S880E)
Q109	8-729-421-22 UN2211
Q110	8-729-421-22 UN2211


CN302
CN301
JW302
JW311
JR315
JW319
JW310
JR314
JR322
F301
JR304
JW303
C305
R322
AUDIO
R
FR-80
1-647-389-
J303
CONTROL L
VTRI
D305
C309
C308
D308
JR323
S301
CL
JW308
JW309
D320
FB302
FB301
JR312
JR313
JR310
JR311
JR308
JR309
JR307
JR306
R319
R320
JR303
JR302
JR316
JR317
5
6
7
8
9
10
11
12
13
14
JW105
JW101
JW106
JW107
CN101
EV-S880E ONLY
RVS
PAUSE
PB
FF
TIMER
REC
VPS
HI8
VB
D103
D104
D105
D106
D107
D108
D109
D110
D111
IC101
JR106
JR107
JR112
JR113
JR114
R103
R104
R105
R106
R107
R108
R109
R110
R111
R114
S102
EJECT
I-647-388-
11


19
25
29
20
26
30
JW311
JR315
S302
PAUSE
R310
JR320
JR321
35
38
41
43
JW312
BZ301
JR316
JR317
JW313
JW314
JW315
JR318
JR319
R307
R308
R309
JW317
JW316
CN304
8
1
1-647-389-11
13
14
15
16
17
18
19
20


VB
D109
R109
S102
EJECT
1-647-388-11

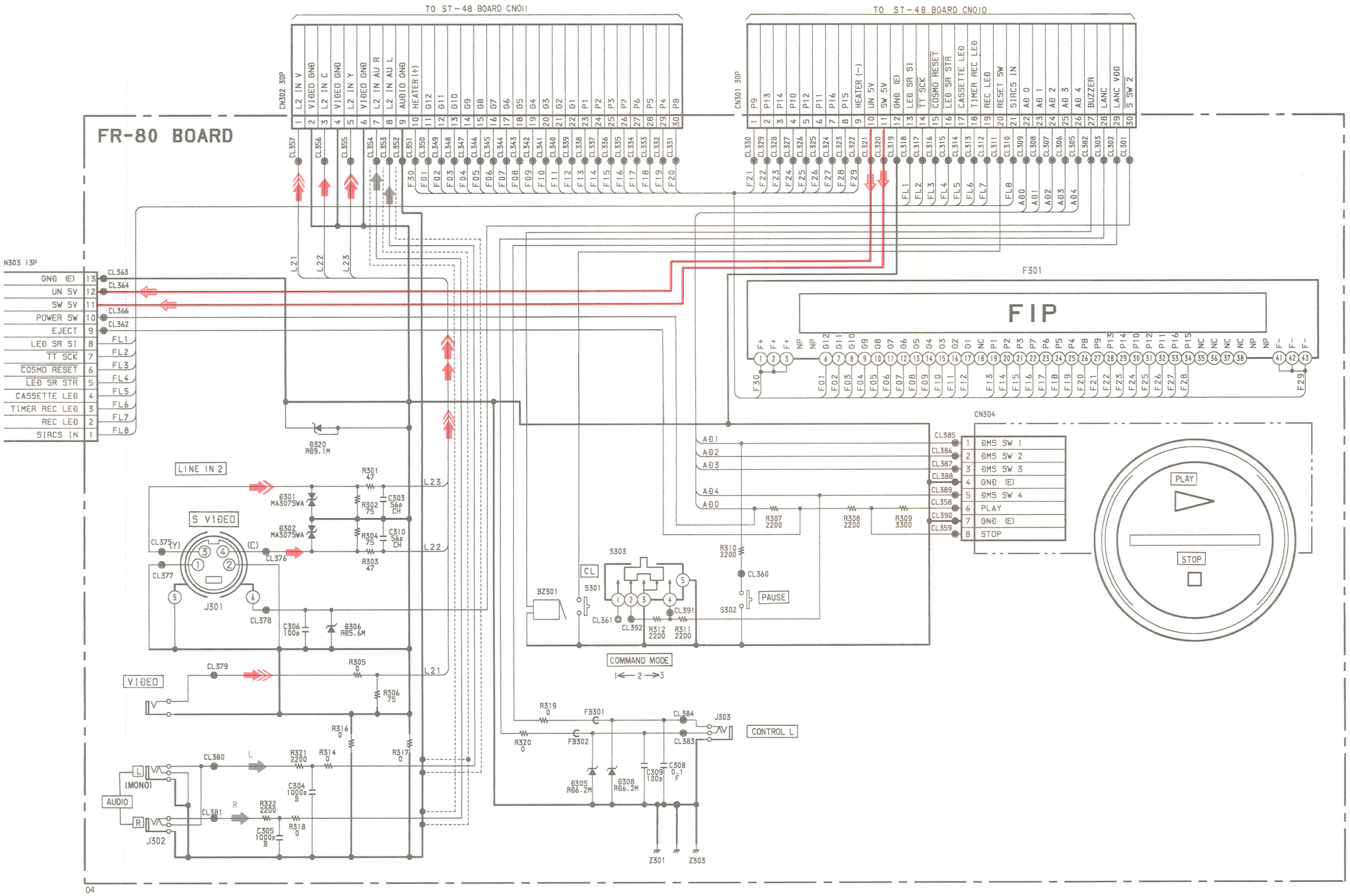
13


FL-54 BOARD
FR-80 BOARD
IC102
LED DRIVE CONTROL
IC102 MC14094BF
IC101
REMOTE CONTROL RECIEVER
IC101 SBX1610-09
CN101 13P
CN303 13P
GND (E)
UN 5V
SW 5V
POWER SW
EJECT
LED SR SI
TT SCK
COSMO RESET
LED SR STR
CASSETTE LED
TIMER REC LED
REC LED
SIRCS IN
CASSETTE
REW
RVS
PAUSE
PB
FF
TIMER
REC
VPS
Hi8
VB
ON/ STANDBY
EJECT
POWER
STANDBY
Q101-107,109,110 LED DRIVE
EV-S880E ONLY
LINE IN 2
S VIDE
VIDEO
AUDIO
(MONO)
J301
J302
no mark : REC/PB mode (SP mode)
( ): REC mode (SP mode)
< >: PB mode (SP mode)

15 16 17 18 19 20 21 22 23 24 25 26 27 28

(See page 107.)

(See page 108.)



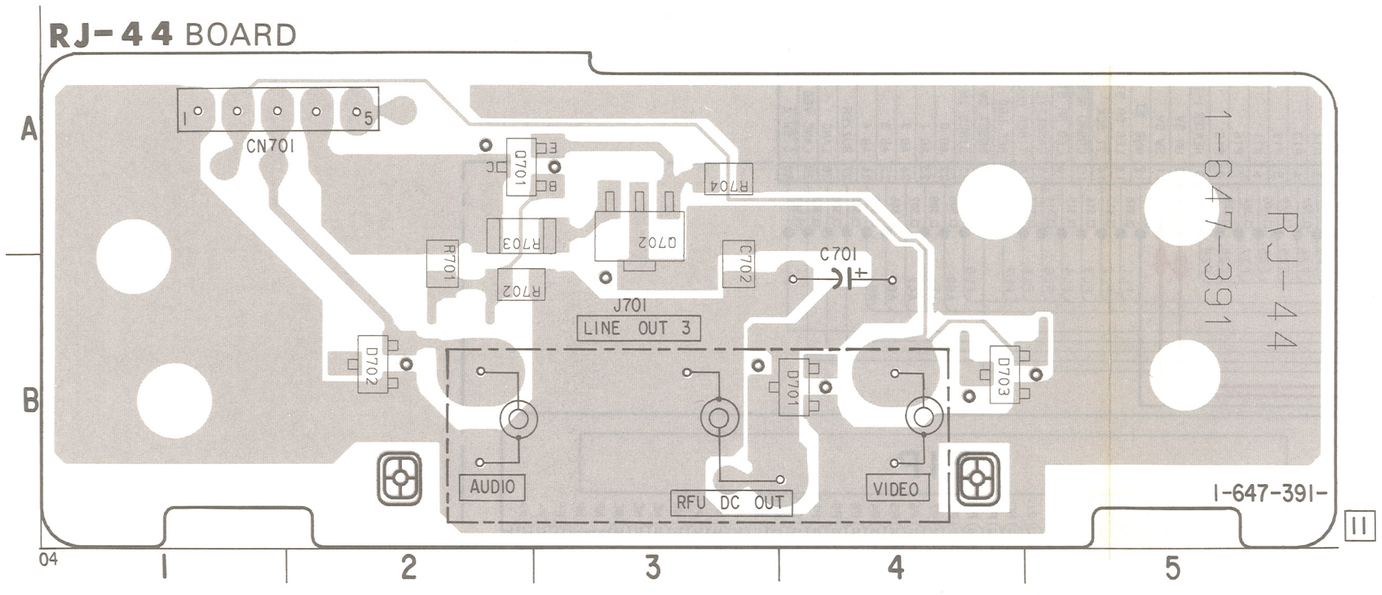
• Signal path

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	⇨	⇨	⇨	⇨

RJ-41 (IN/OUT), RJ-44 (RF OUT) (EV-C770E only) PRINTED WIRING BOARDS

—Ref. No. RJ-41 and RJ-44 BOARDS : 4000 series—

RJ-44 BOARD



RJ-44 BOARD

D701	B-4
D702	B-2
D703	B-4
Q701	A-2
Q702	A-3

< DIODE >

D701	8-719-106-79 RD13M-B1
D702	8-719-420-81 MA3075WA
D703	8-719-420-81 MA3075WA

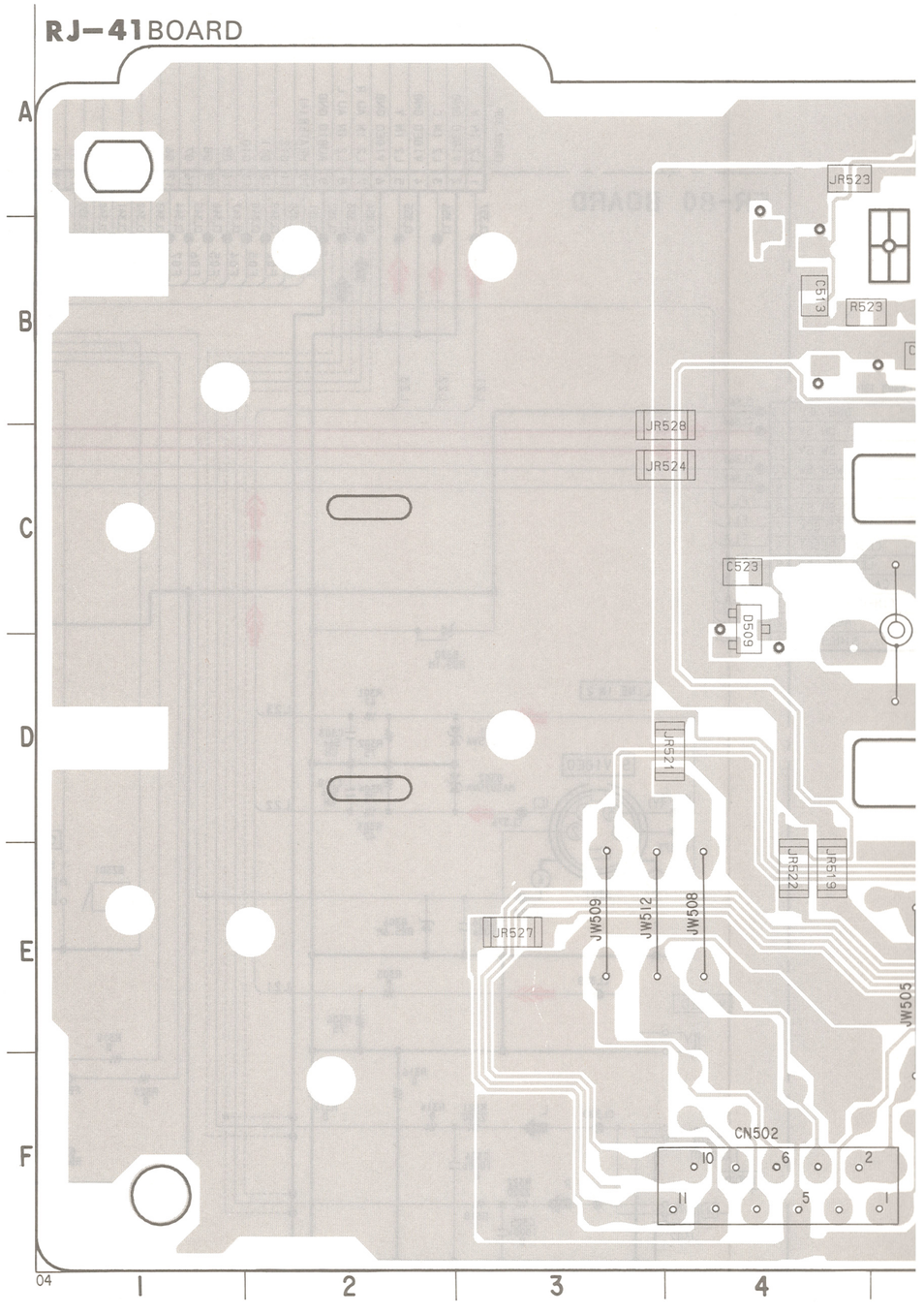
< TRANSISTOR >

Q701	8-729-422-27 2SD601A-Q
Q702	8-729-101-07 2SB798-DL

RJ-41 BOARD

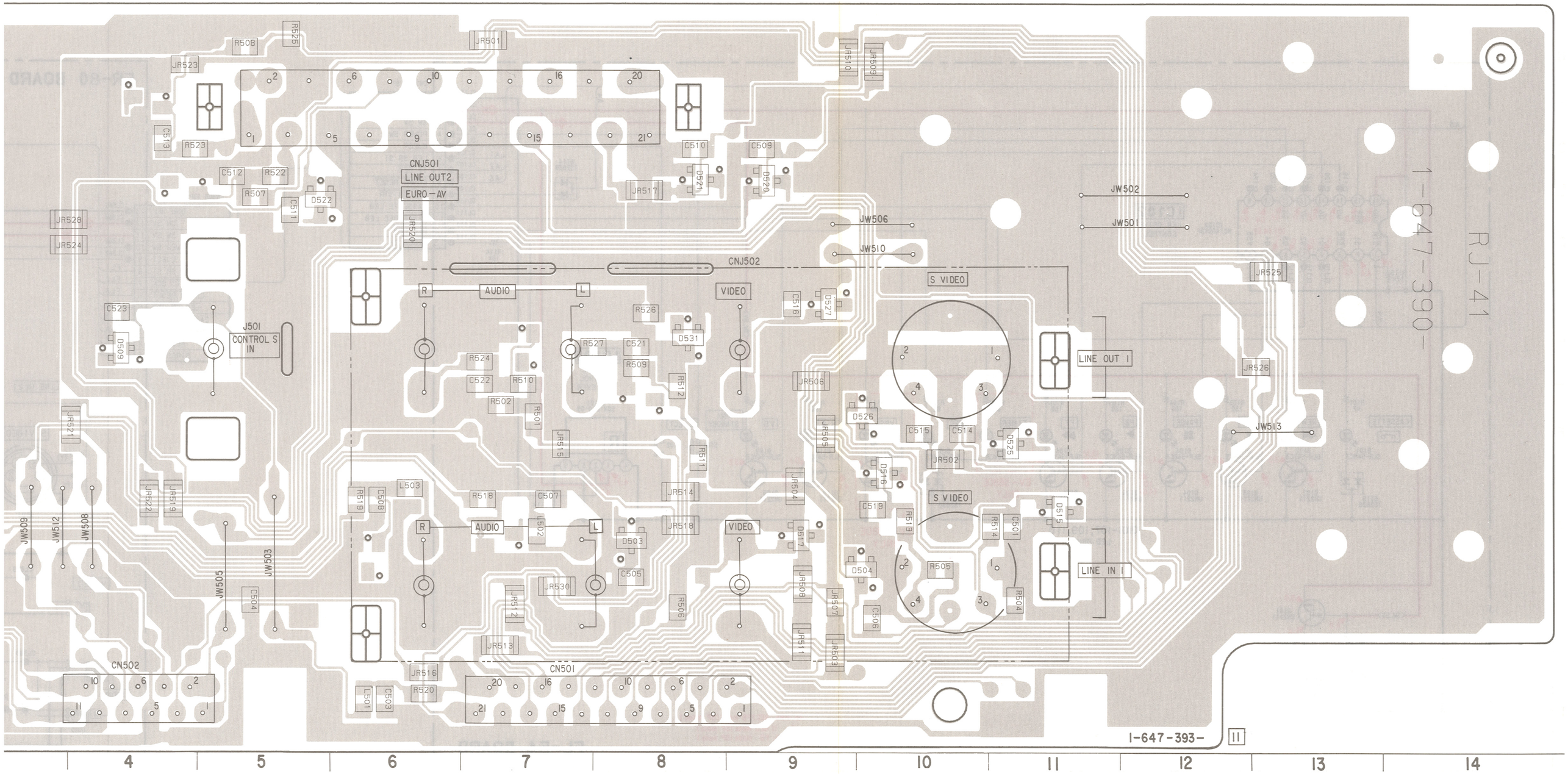
D503	E-8
D504	E-10
D509	C-4
D515	E-11
D516	D-10
D517	E-9
D520	B-9
D521	B-8
D522	B-5
D525	D-11
D526	D-10
D527	C-9
D531	C-8

RJ-41 BOARD



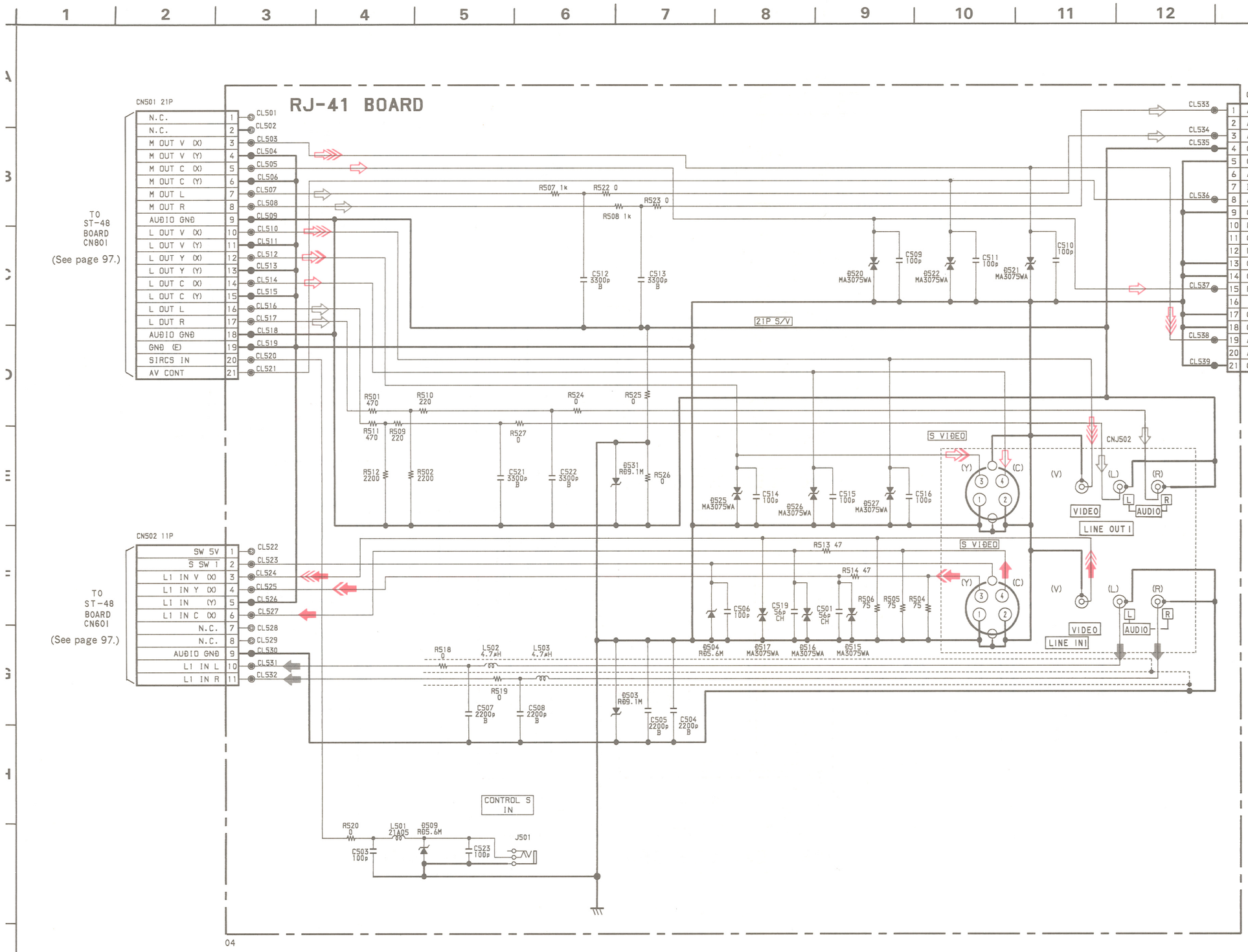
< DIODE >

D503	8-719-106-43 RD9.1M-B1
D504	8-719-105-90 RD5.6M-B1
D509	8-719-105-90 RD5.6M-B1
D515	8-719-420-81 MA3075WA
D516	8-719-420-81 MA3075WA
D517	8-719-420-81 MA3075WA
D520	8-719-420-81 MA3075WA
D521	8-719-420-81 MA3075WA
D522	8-719-420-81 MA3075WA
D525	8-719-420-81 MA3075WA
D526	8-719-420-81 MA3075WA
D527	8-719-420-81 MA3075WA
D531	8-719-106-43 RD9.1M-B1


RJ-41
1-647-390-
CNJ501
LINE OUT2
EURO-AV
CNJ502
AUDIO
VIDEO
S VIDEO
J501
CONTROL S IN
LINE OUT 1
LINE IN 1
JW502
JW501
JW506
JW510
JW513
JW509
JW512
JW508
JW505
JW503
CN502
CN501
1-647-393-
II
4
5
6
7
8
9
10
11
12
13
14

RJ-41 (IN/OUT), RJ-44 (RF OUT) (EV-C770E only) SCHEMATIC DIAGRAM

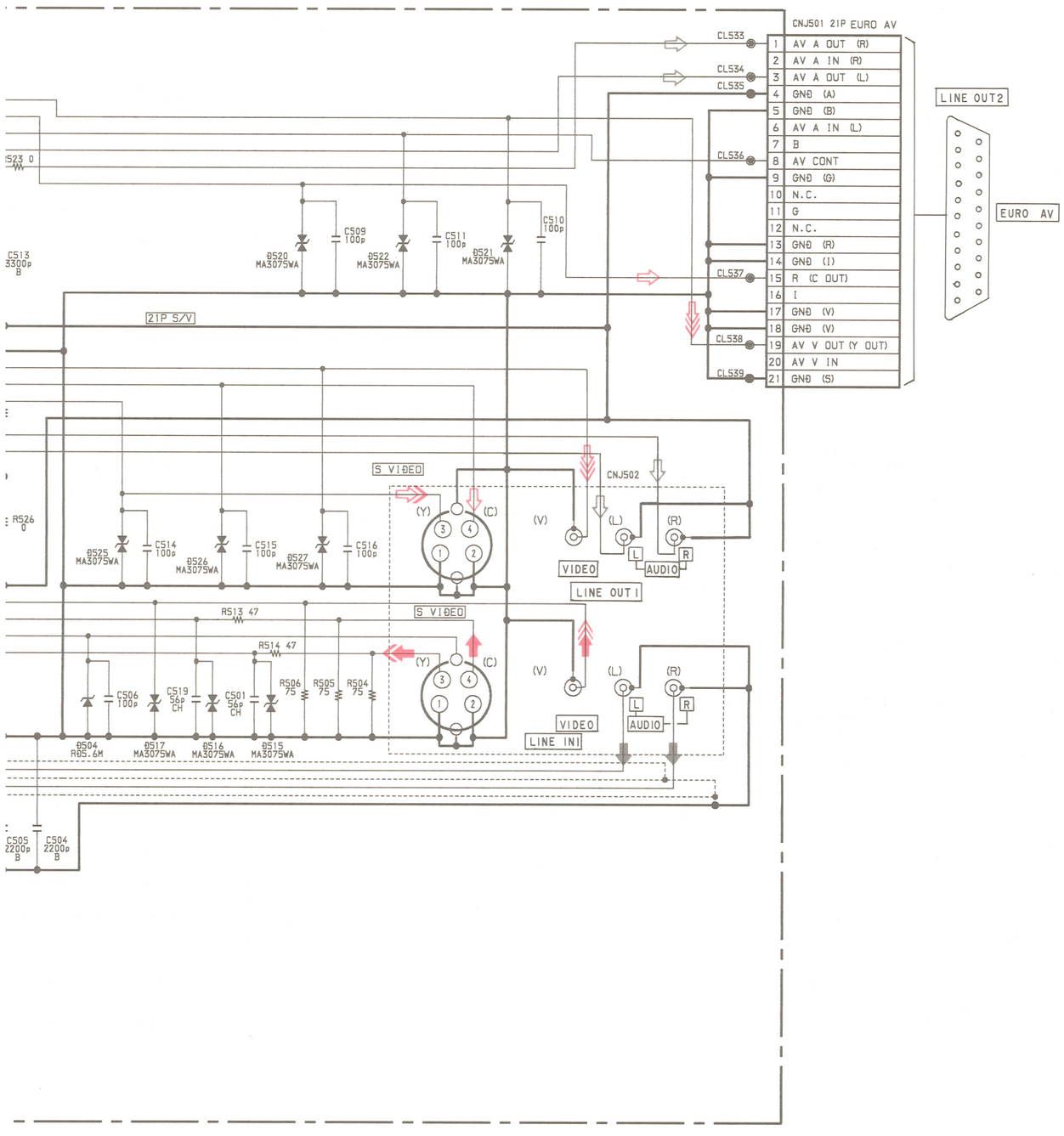
—Ref. No. RJ-41 and RJ-44 BOARDS : 4000 series—

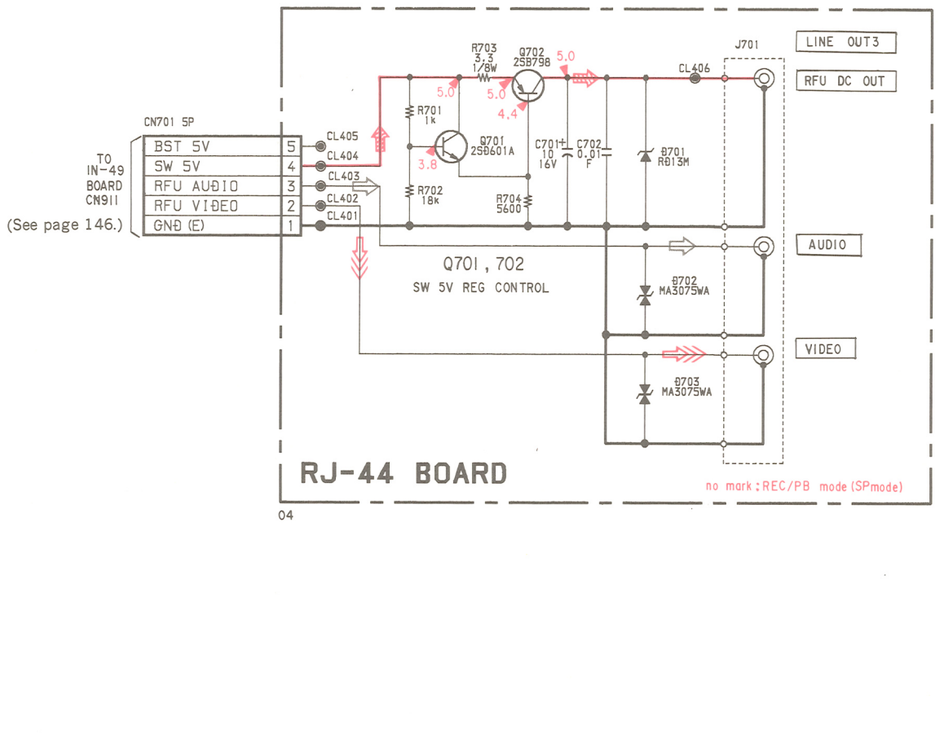


• Signal path

	CHROMA
REC	➡
PB	⇨

7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22



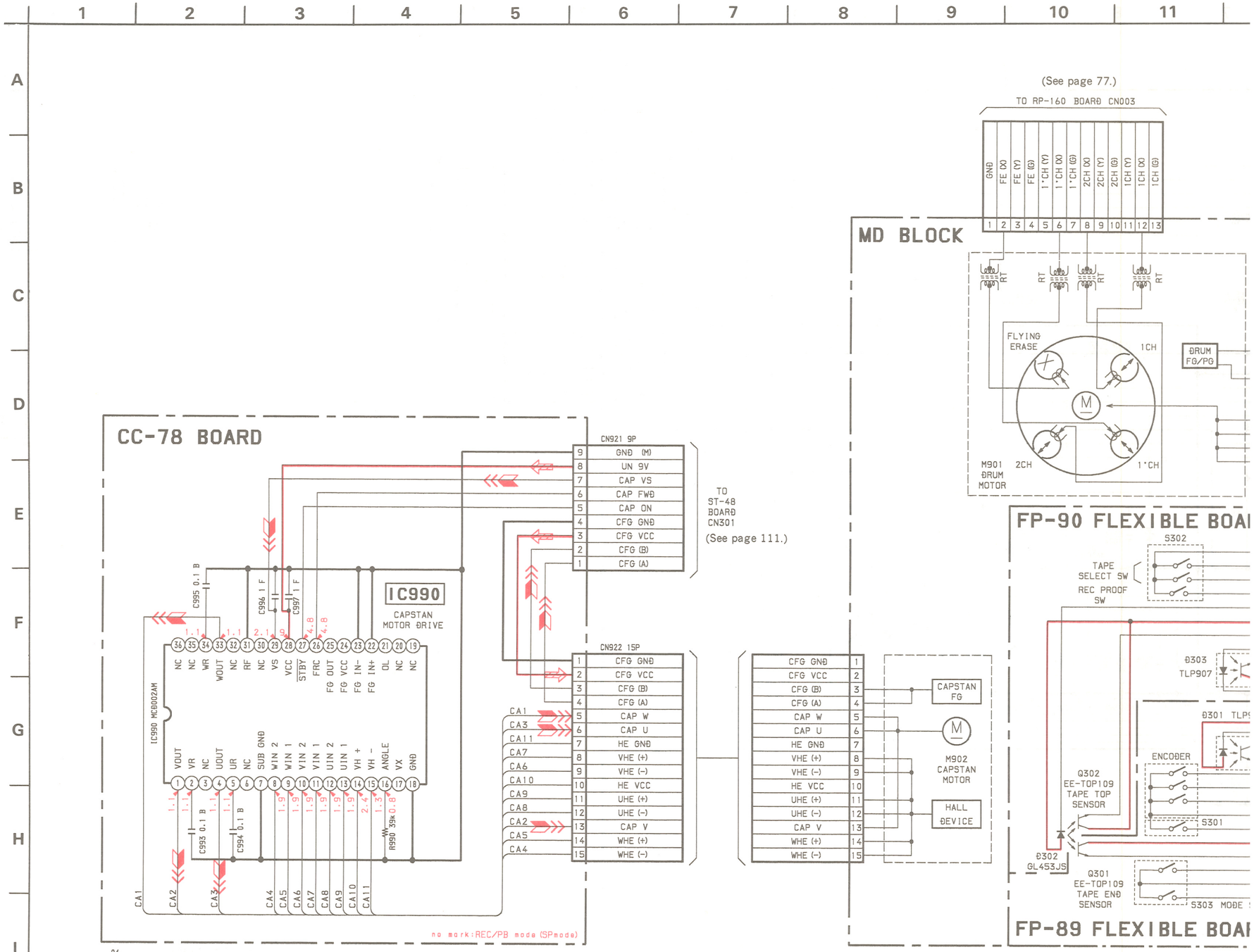


● **Signal path**

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	⇨	⇨	⇨	⇨

CC-78 (CAPSTAN MOTOR DRIVE), DC-53 (RELAY), UC-16 (RELAY), FP-89, FP-90 (MECHADECK FLEXIBLE) SCHEMATIC DIAGRAM

—Ref. No. CC-78, DC-53, UC-16, FP-89 and FP-90 BOARDS : 5000 series—



Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Signal path

	REC	REC/PB	PB
Drum speed servo		▰	
Drum phase servo		▰»	
Drum servo (speed and phase)		▰»»	
Capstan speed servo		▰	
Capstan phase servo	▰»	▰»	▱»
Capstan servo (speed and phase)		▰»»	
Ref. signal	▰	▰	▱

2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18

(See page 77.)

TO RP-160 BOARD CN003

GND | FE (X) | FE (Y) | FE (G) | 1·CH (Y) | 1·CH (X) | 1·CH (G) | 2CH (X) | 2CH (Y) | 2CH (G) | 1CH (Y) | 1CH (X) | 1CH (G)
1 2 3 4 5 6 7 8 9 10 11 12 13

MD BLOCK

RT RT RT RT

FLYING ERASE

1CH

M901 DRUM MOTOR

2CH

1·CH

DRUM FG/PG

10	GND
9	PG (+)
8	PG (COM)
7	FG (+)
6	FG (COM)
5	GND
4	DRM COM
3	DRM W
2	DRM V
1	DRM U

DC-53 BOARD

M904 FRONT LOADING MOTOR

CN933 2P

FL LOAD	1
FL UNLD	2

M903 LOADING MOTOR

CN934 2P

LD LOAD	1
LD UNLD	2

CN931 10P

GND	10
PG (+)	9
PG (COM)	8
FG (+)	7
FG (COM)	6
GND	5
DRM COM	4
DRM W	3
DRM V	2
DRM U	1

CN932 14P

14	FL LOAD
13	FL UNLOAD
12	LD LOAD
11	LD UNLOAD
10	GND
9	PG (+)
8	PG (COM)
7	FG (+)
6	FG (COM)
5	GND
4	DRM COM
3	DRM W
2	DRM V
1	DRM U

TO ST-48 BOARD CN302

(See page 111.)

FP-90 FLEXIBLE BOARD

S302

TAPE SELECT SW

REC PROOF SW

CN912 11P

COM	1
ME/MP	2
MP/HG	3
REC PROOF	4
TOP END LED	5
5V	6
TOP SENS	7
T REEL LED	8
T REEL FG	9
5V	10
T REEL LED	11

CN911 16P

1	COM
2	ME/MP
3	MP/HG
4	REC PROOF
5	TOP END LED
6	UN 5V
7	TOP SENS
8	S REEL FG
9	T REEL FG
10	MODE SW 2
11	MODE SW 1
12	MODE SW 0
13	CC DOWN SW
14	END SENS
15	13/10
16	7/10

PS999 0.25A

R995 560

D303 TLP907

D301 TLP907

ENCODER

S301

Q302 EE-TOP109 TAPE TOP SENSOR

D302 GL453JS

Q301 EE-TOP109 TAPE END SENSOR

S303 MODE SW

CN913 13P

S REEL LED	1
5V	2
S REEL FG	3
MODE SW 2	4
MODE SW 1	5
MODE SW 0	6
COM	7
CC DOWN	8
5V	9
END SENS	10
13/10	11
COM	12
7/10	13

TO ST-48 BOARD CN013

(See page 109.)

FP-89 FLEXIBLE BOARD

UC-16 BOARD

CFG GND 1
CFG VCC 2
CFG (B) 3
CFG (A) 4
CAP W 5
CAP U 6
HE GND 7
VHE (+) 8
VHE (–) 9
HE VCC 10
UHE (+) 11
UHE (–) 12
CAP V 13
WHE (+) 14
WHE (–) 15

CAPSTAN FG

M902 CAPSTAN MOTOR

HALL DEVICE

78 BOARD

CN921 9P

9	GND (M)
8	UN 9V
7	CAP VS
6	CAP FWD
5	CAP ON
4	CFG GND
3	CFG VCC
2	CFG (B)
1	CFG (A)

TO ST-48 BOARD CN301

(See page 111.)

C995 0.1 B

C996 1 F

C997 1 F

IC990

CAPSTAN MOTOR DRIVE

NC NC WR WOUT NC RF NC VS VCC STBY FRC FG OUT FG VCC FG IN– FG IN+ OL NC NC

VOUT VR NC UOUT UR NC SUB GND WIN 2 WIN 1 VIN 2 VIN 1 UIN 2 UIN 1 VH + VH – ANGLE VX GND

C993 0.1 B

C994 0.1 B

R990 39k

CN922 15P

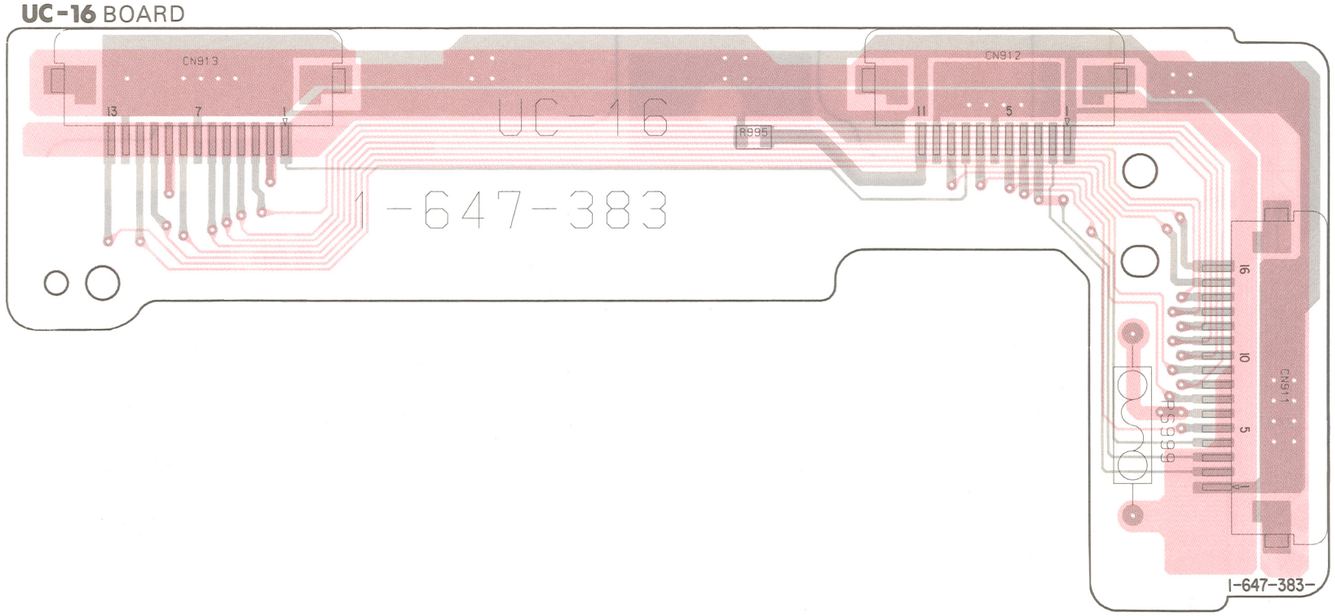
1	CFG GND
2	CFG VCC
3	CFG (B)
4	CFG (A)
5	CAP W
6	CAP U
7	HE GND
8	VHE (+)
9	VHE (–)
10	HE VCC
11	UHE (+)
12	UHE (–)
13	CAP V
14	WHE (+)
15	WHE (–)

CA1 CA3 CA11 CA7 CA6 CA10 CA9 CA8 CA2 CA5 CA4

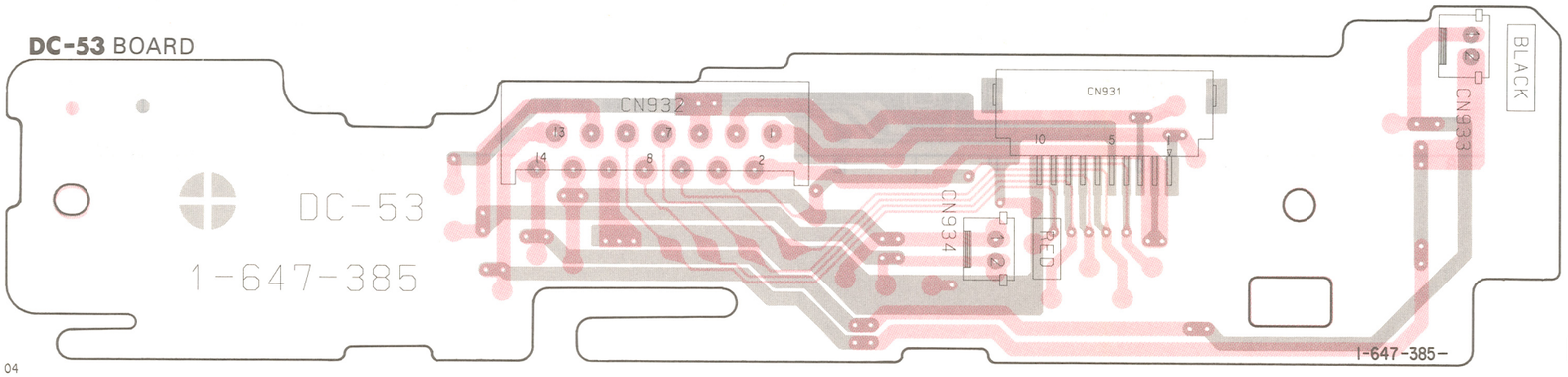
CA2 CA3 CA4 CA5 CA6 CA7 CA8 CA9 CA10 CA11

no mark:REC/PB mode (SP mode)

UC-16 BOARD

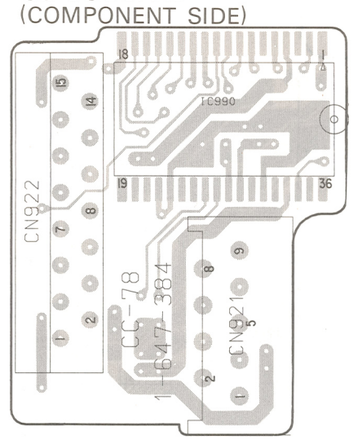


DC-53 BOARD



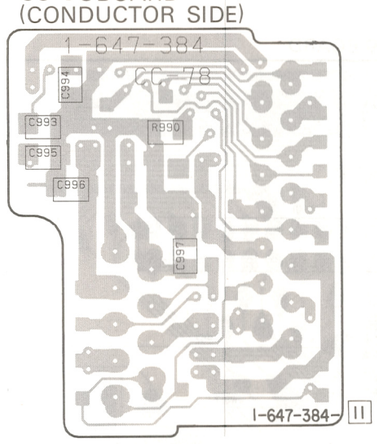
• : pattern from the side which enables seeing.

CC-78 BOARD (COMPONENT SIDE)



< IC >
IC990 8-759-823-65 MCD002AM

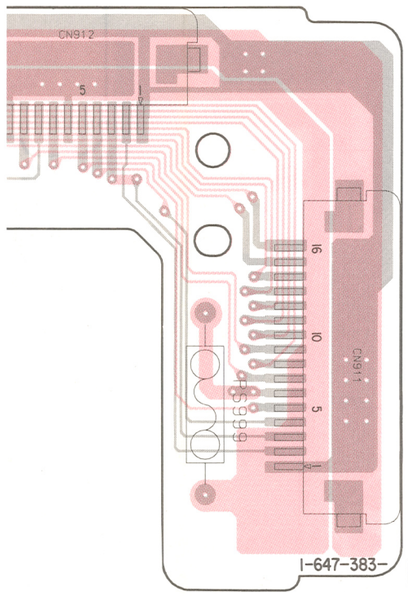
CC-78 BOARD (CONDUCTOR SIDE)



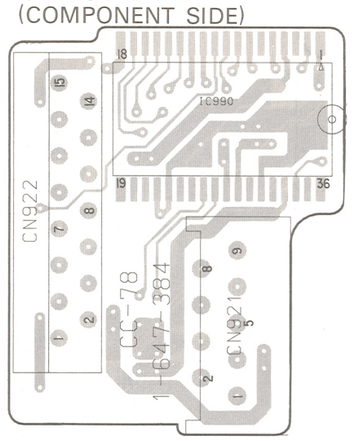
< DIOD
D302
D303

< TRAN
Q302

.E) PRINTED WIRING BOARDS

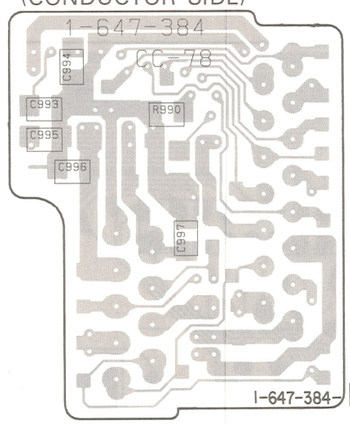


CC-78 BOARD
(COMPONENT SIDE)

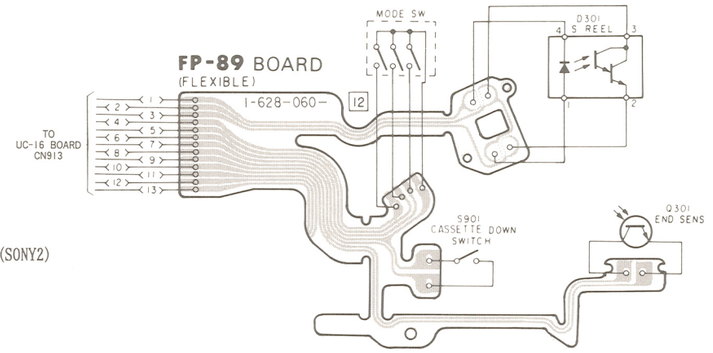


< IC >
IC990 8-759-823-65 MCD002AM

CC-78 BOARD
(CONDUCTOR SIDE)



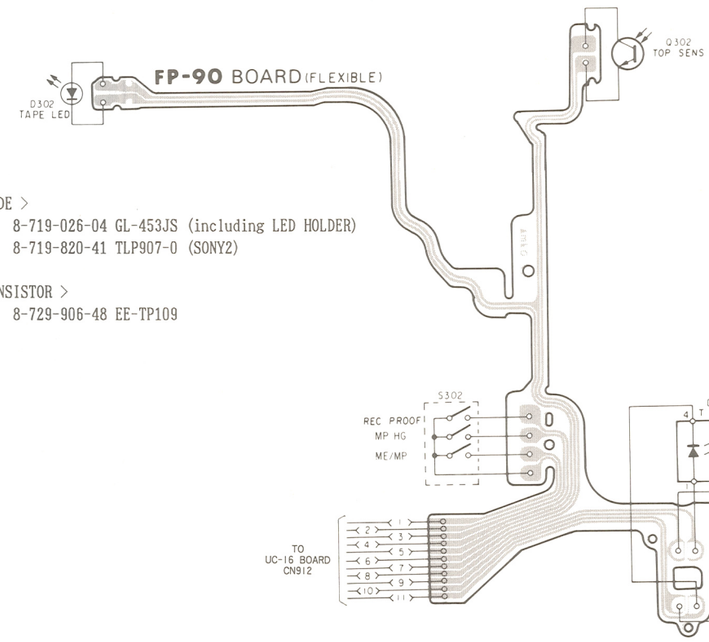
FP-89 BOARD
(FLEXIBLE)



< DIODE >
D301 8-719-820-44 TLP907-0 (SONY2)

< TRANSISTOR >
Q301 8-729-906-48 EE-TP109

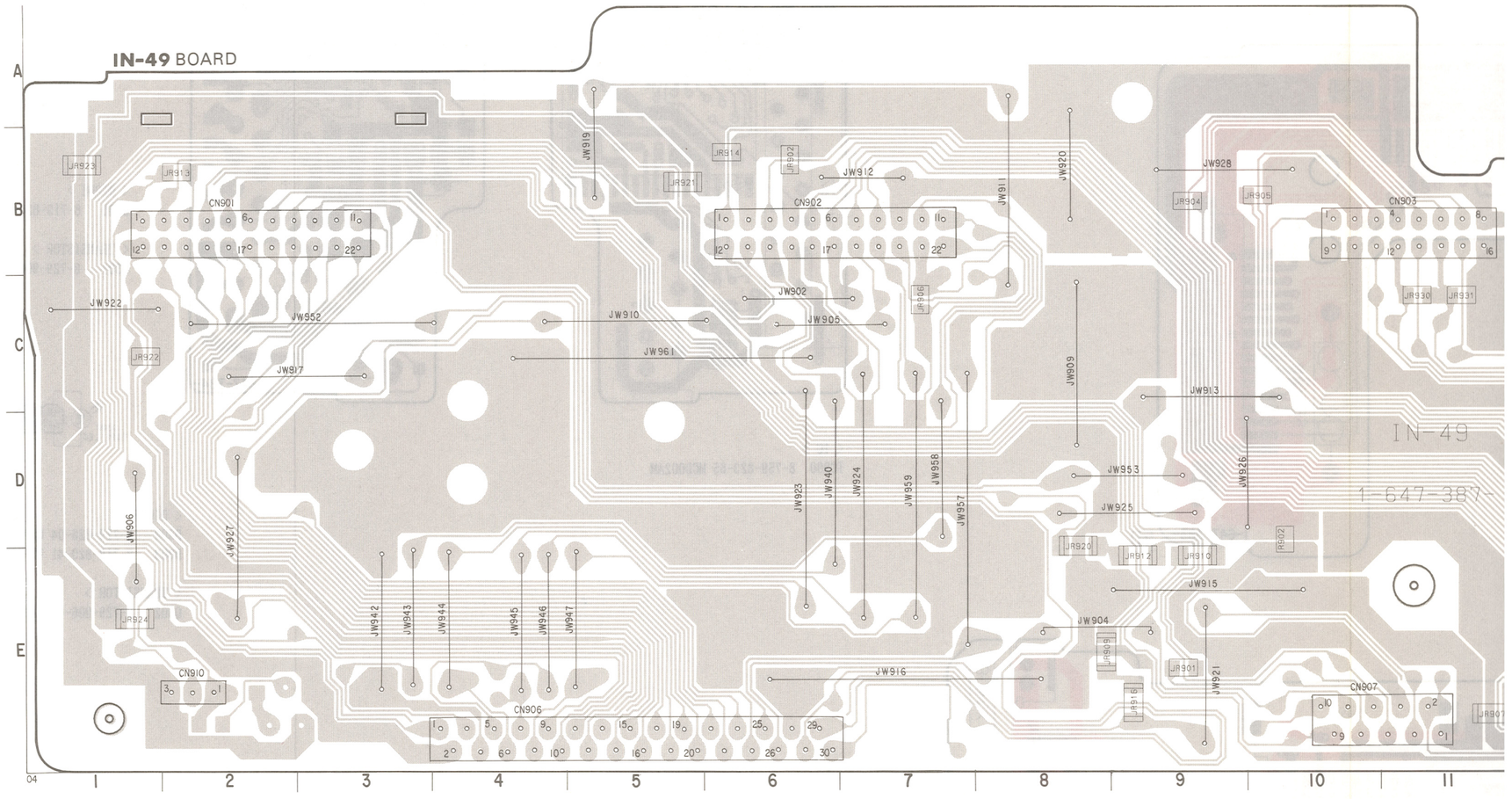
FP-90 BOARD (FLEXIBLE)



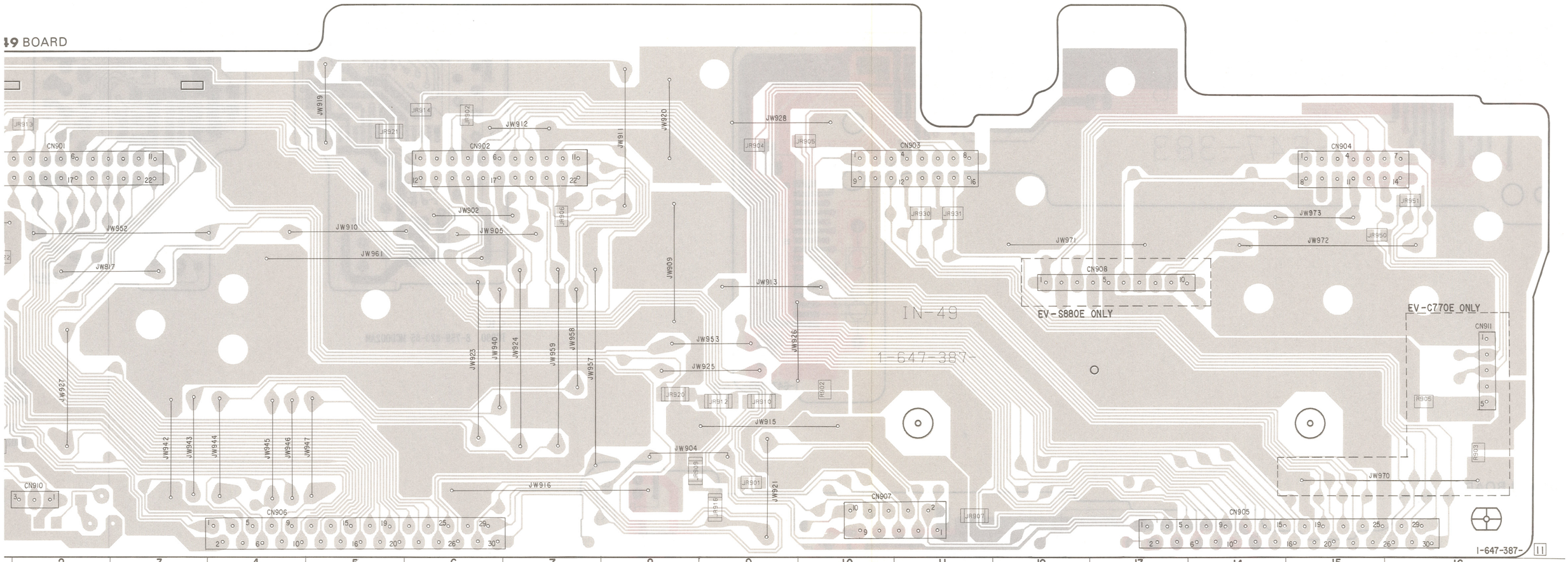
< DIODE >
D302 8-719-026-04 GL-453JS (including LED HOLDER)
D303 8-719-820-41 TLP907-0 (SONY2)

< TRANSISTOR >
Q302 8-729-906-48 EE-TP109

IN-49 (RELAY) PRINTED WIRING BOARD
—Ref. No. IN-49 BOARD : 4000 series—

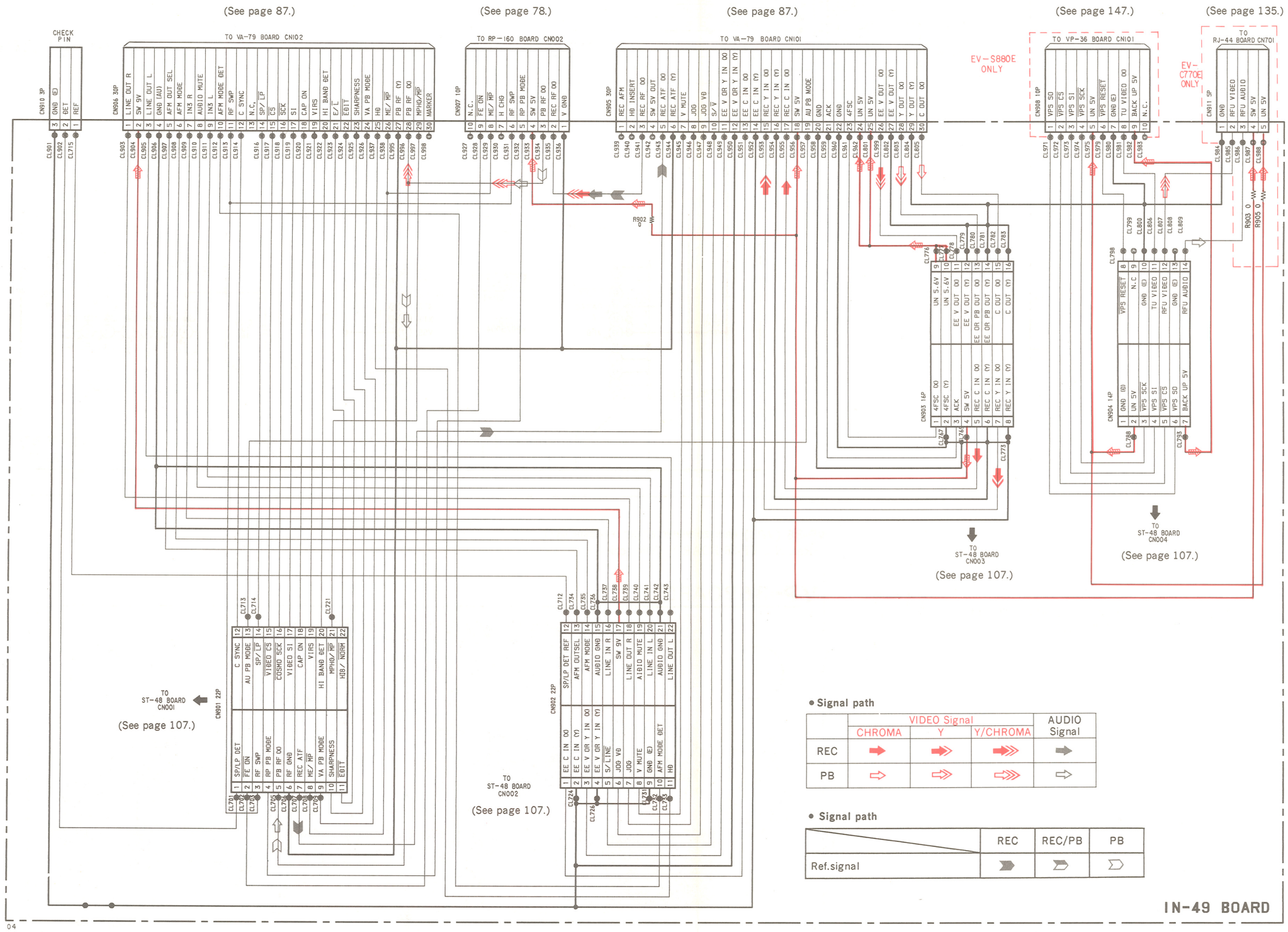


49 BOARD


CN901
CN902
CN903
CN904
CN905
CN906
CN907
CN908
CN909
CN910
CN911
JW912
JW913
JW914
JW915
JW916
JW917
JW919
JW920
JW921
JW923
JW924
JW925
JW926
JW927
JW928
JW940
JW942
JW943
JW944
JW945
JW946
JW947
JW952
JW953
JW958
JW959
JW961
JW969
JW971
JW972
JW973
JW970
EV-S880E ONLY
EV-C770E ONLY
IN-49
1-647-387-
1-647-387-11

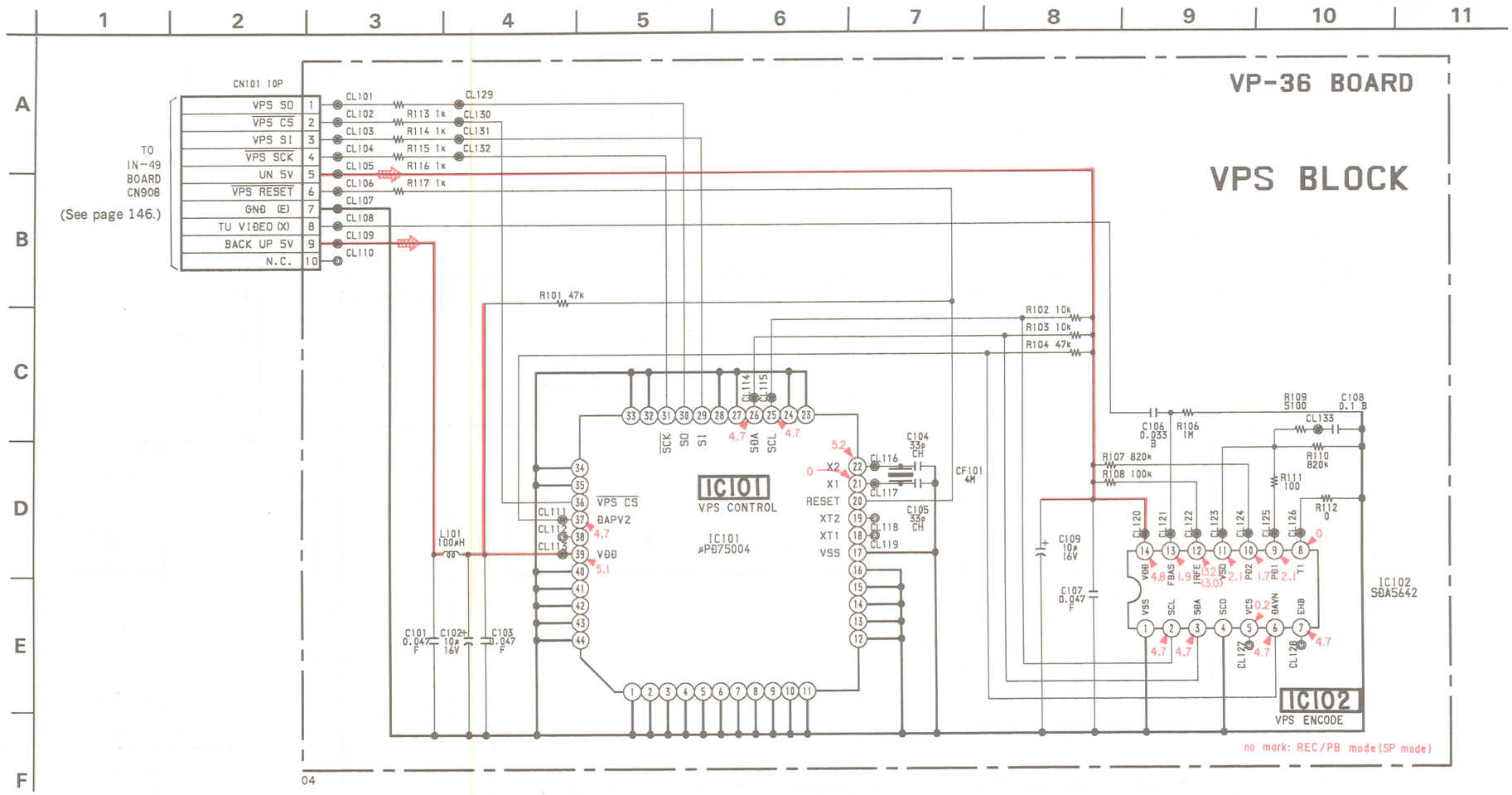
IN-49 (RELAY) SCHEMATIC DIAGRAM

—Ref. No. IN-49 BOARD : 4000 series—



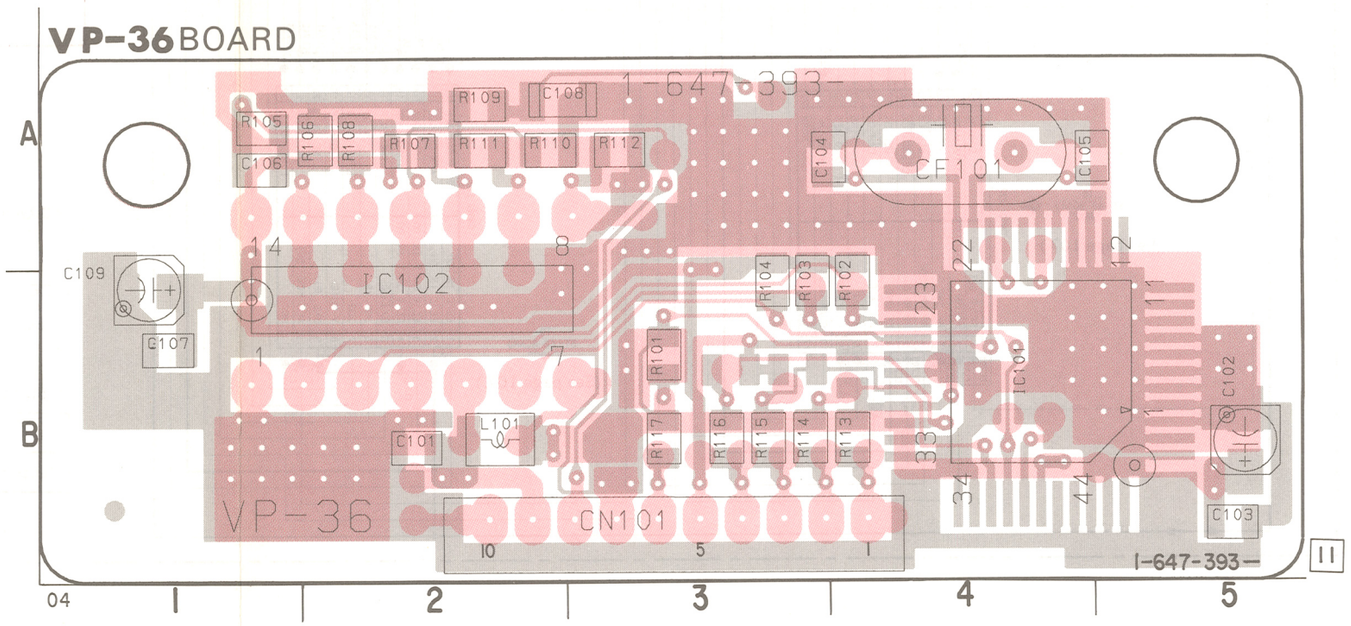
VP-36 (VPS) SCHEMATIC DIAGRAM (EV-S880E only)

—Ref. No. VP-36 BOARD : 7000 series—



VP-36 (VPS) PRINTED WIRING BOARD (EV-S880E only)

—Ref. No. VP-36 BOARD : 7000 series—

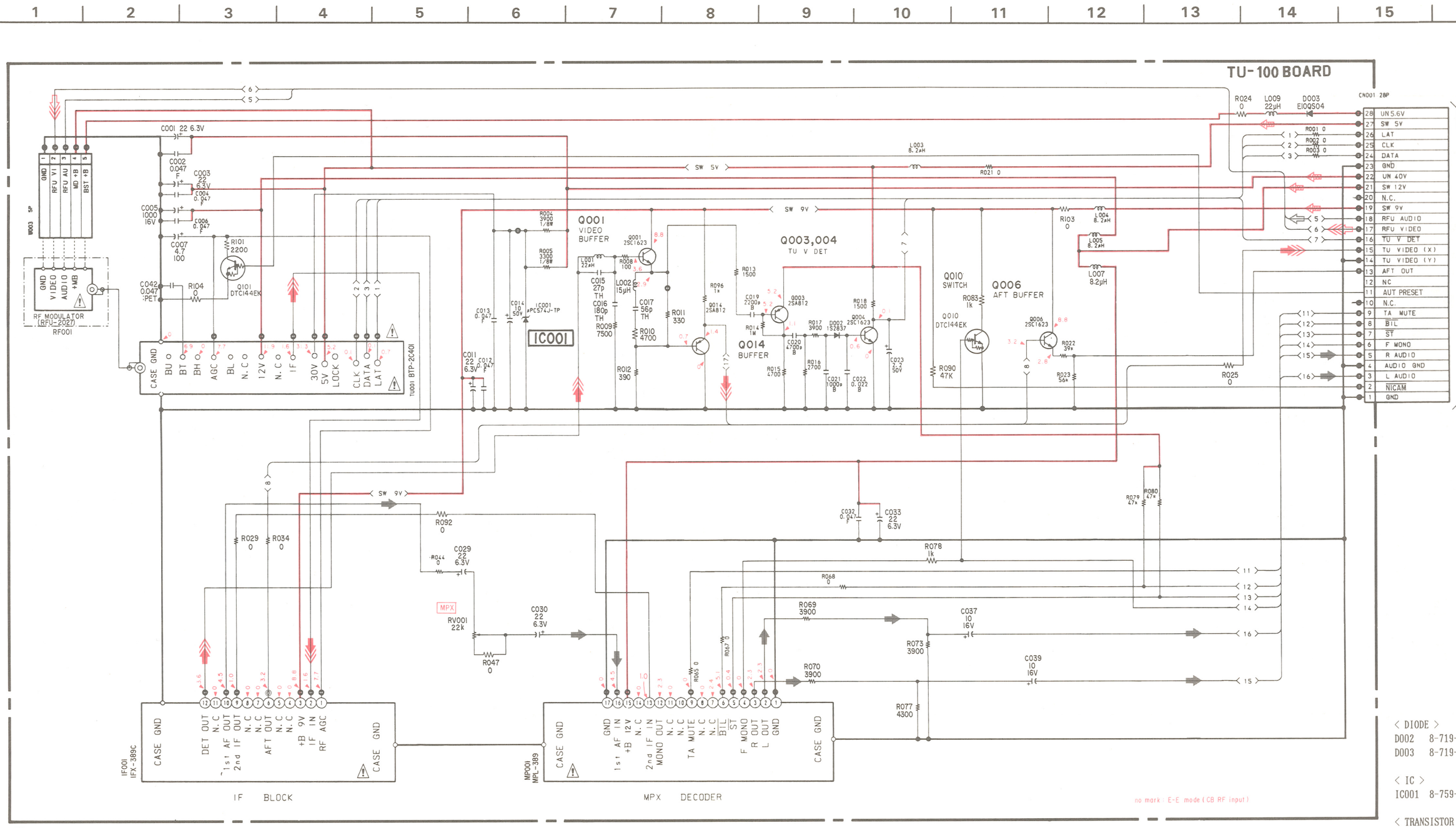


< IC >

IC101 8-759-147-30 uPD75004-GB-562-3B4
IC102 8-759-030-60 SDA5642

VP-36 BOARD	
IC101	B-4
IC102	B-2

● : pattern from the side which enables seeing.



04

TU-100 BOARD
D002 E-5
D003 A-4

IC001 D-2

Q001 F-4
Q003 F-5
Q004 E-5
Q006 G-6
Q010 G-5
Q014 D-4
Q101 G-3

< DIODE >
D002 8-719-400-18 MA152WK
D003 8-719-200-36 E10QS04

< IC >
IC001 8-759-157-40 uPC574J

< TRANSISTOR >
Q001 8-729-120-28 2SC1623-L5L6
Q003 8-729-216-22 2SA1162-G
Q004 8-729-120-28 2SC1623-L5L6
Q006 8-729-120-28 2SC1623-L5L6
Q010 8-729-901-01 DTC144EK
Q014 8-729-216-22 2SA1162-G
Q101 8-729-901-01 DTC144EK

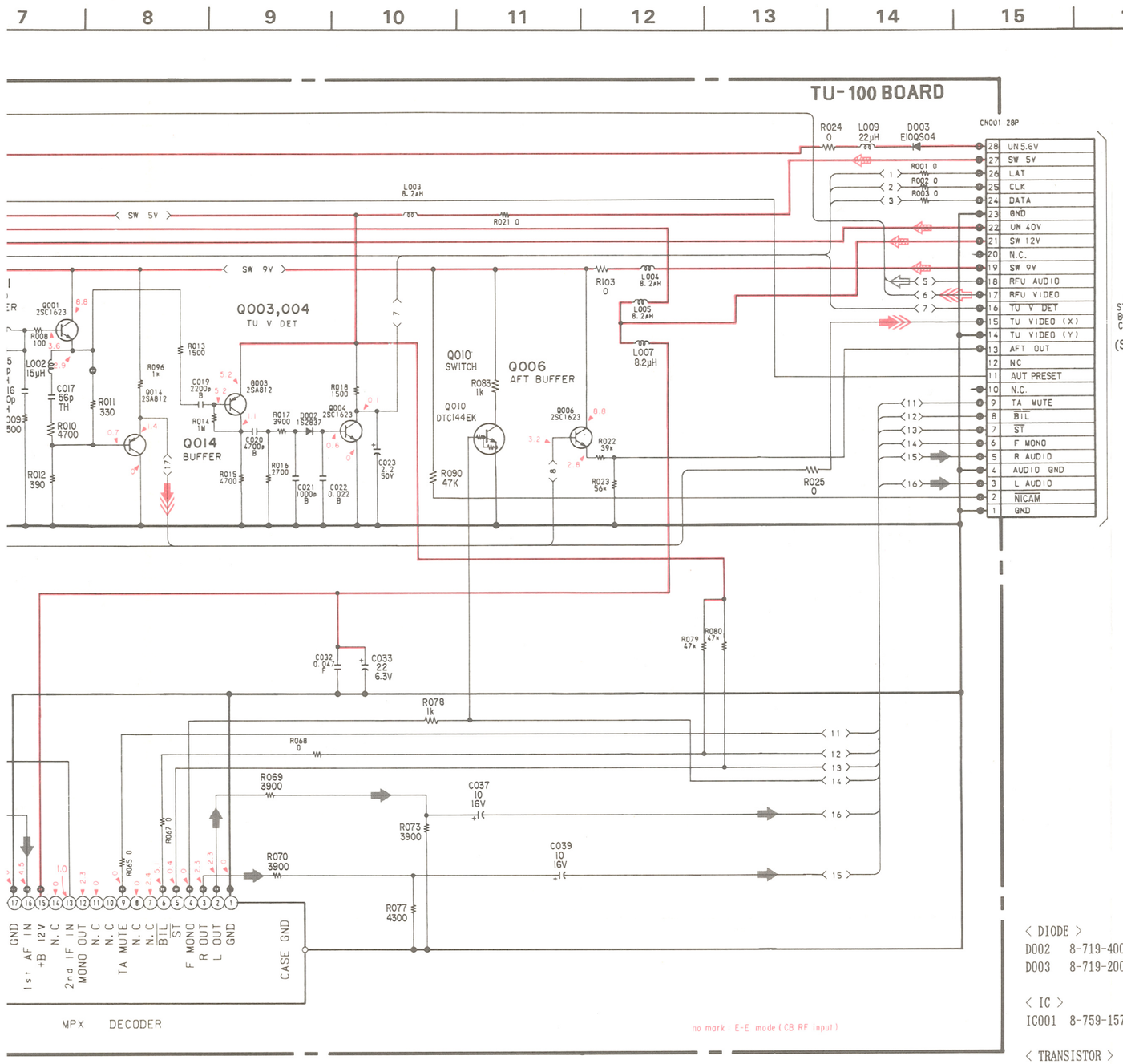
• **Signal path**

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	⇨	⇨	⇨	⇨

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

TU-100 (TUNER) PRINTED WIRING BOARD (EV-S880E only)

—Ref. No. TU-100 BOARD : 6000 series—



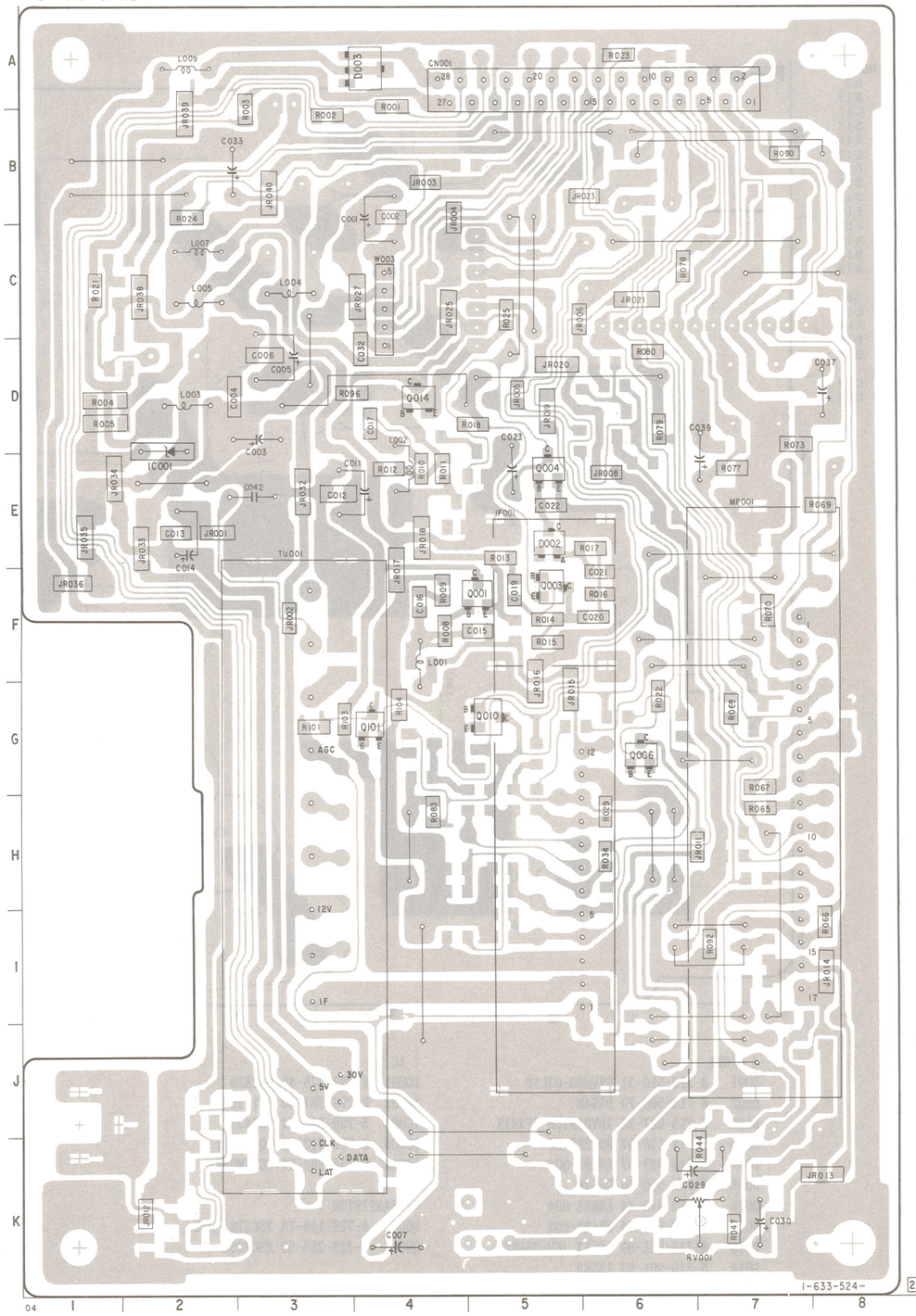
TO ST-48 BOARD CN006

(See page 108.)

TU-100 BOARD

D002	E-5
D003	A-4
IC001	D-2
Q001	F-4
Q003	F-5
Q004	E-5
Q006	G-6
Q010	G-5
Q014	D-4
Q101	G-3

TU-100 BOARD



< DIODE >

D002	8-719-400-18 MA152WK
D003	8-719-200-36 E10QS04

< IC >

IC001	8-759-157-40 uPC574J

< TRANSISTOR >

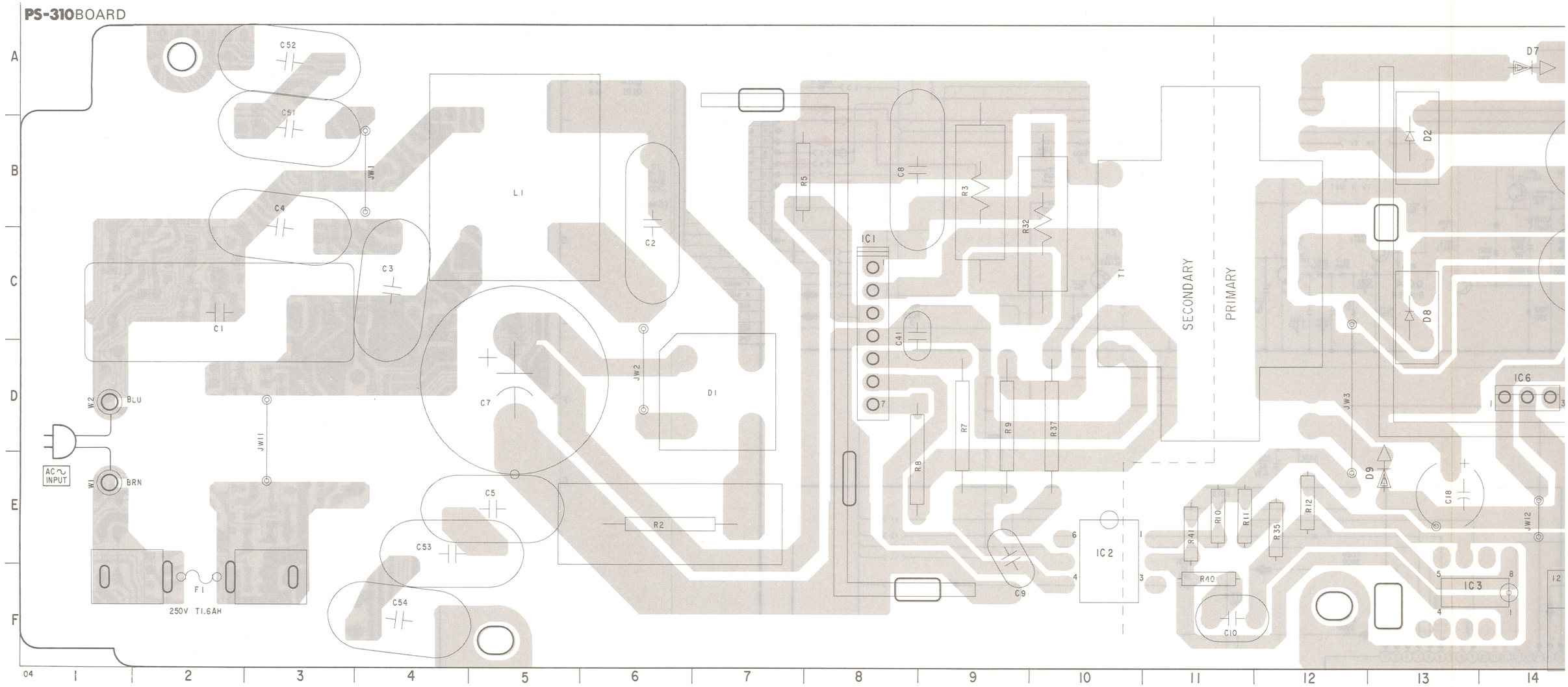
Q001	8-729-120-28 2SC1623-L5L6
Q003	8-729-216-22 2SA1162-G
Q004	8-729-120-28 2SC1623-L5L6
Q006	8-729-120-28 2SC1623-L5L6
Q010	8-729-901-01 DTC144EK
Q014	8-729-216-22 2SA1162-G
Q101	8-729-901-01 DTC144EK

PS-310 (POWER) PRINTED WIRING BOARD

—Ref. No. PS-310 BOARD : 9000 series—

PS-310 BOARD

D001	D-7
D002	B-13
D003	C-17
D004	B-17
D007	A-14
D008	C-13
D009	E-13
D012	D-18
D013	C-19
D014	E-19
D015	F-19
D016	A-19
D017	B-18
D018	A-19
IC001	C-8
IC002	E-10
IC003	F-14
IC005	D-16
IC006	D-14
Q004	C-19
Q005	C-18



< DIODE >

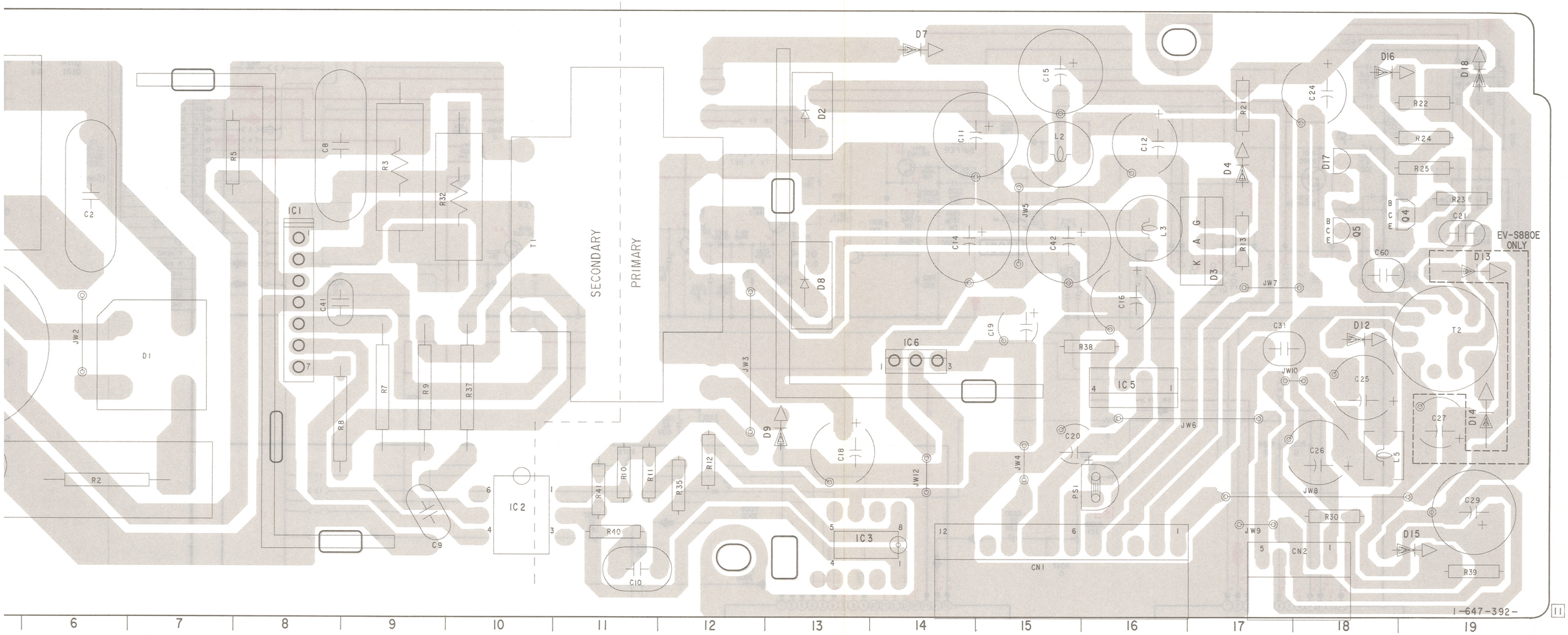
D001	8-719-510-31	S2VB60-03L10
D002	8-719-500-70	D5S4M
D003	8-719-027-33	THYRISTOR TF341S
D004	8-719-110-57	RD22ES-B2
D007	8-719-987-87	ERA85-009
D008	8-719-500-70	D5S4M
D009	8-719-913-44	ERA82-004
D012	8-719-913-44	ERA82-004
D013	8-719-901-83	1SS83 (EV-S880E)
D014	8-719-901-83	1SS83
D015	8-719-110-13	RD9.1ES-B2
D016	8-719-921-63	MTZJ-7.5B
D017	8-719-000-12	MC931
D018	8-719-934-22	HZS30-2L

< IC >

IC001	8-759-979-49	MA2820
IC002	8-719-987-48	PC111LS
IC003	8-759-927-49	IR9431
IC005	8-759-513-71	PQ05RF21
IC006	8-759-982-52	RC79M05FA

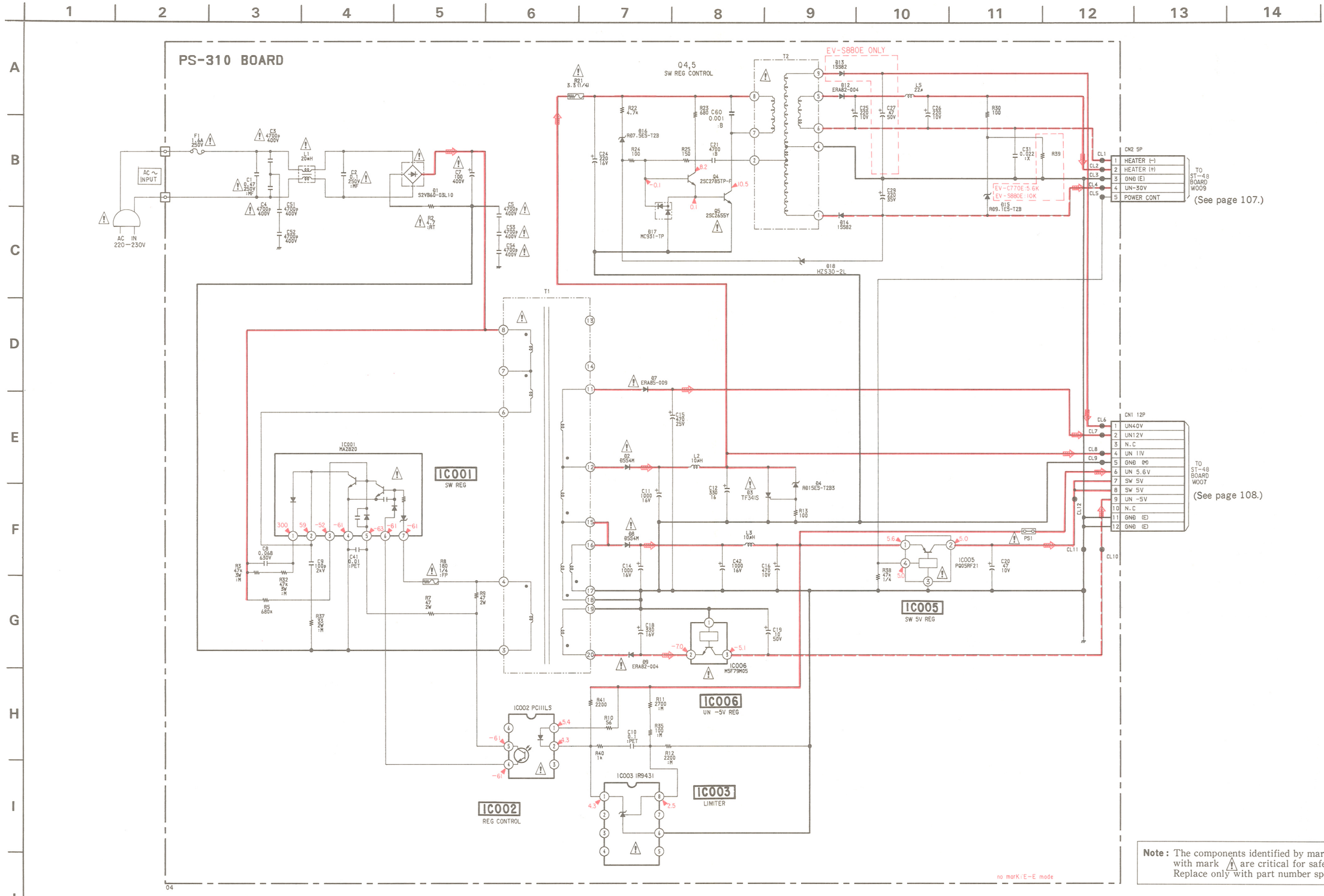
< TRANSISTOR >

Q004	8-729-119-78	2SC2785-HFE
Q005	8-729-265-52	2SC2655


SECONDARY
PRIMARY
D7
D2
D8
D9
D1
D4
D16
D18
D17
D12
D13
D14
D15
C15
C11
C12
C14
C42
C16
C19
C18
C24
C31
C60
C21
C25
C27
C26
C29
C20
C10
C9
C41
C8
R5
R3
R32
R2
R7
R9
R37
R8
R41
R10
R11
R35
R12
R40
R21
R13
R22
R24
R25
R23
R38
R30
R39
L2
L3
L5
Q4
Q5
JW2
JW3
JW4
JW5
JW6
JW7
JW8
JW9
JW10
JW12
IC1
IC2
IC3
IC5
IC6
T1
T2
PS1
CN1
CN2
EV-S880E ONLY
1-647-392-
11
6
7
8
9
10
11
12
13
14
15
16
17
18
19

PS-310 (POWER) SCHEMATIC DIAGRAM

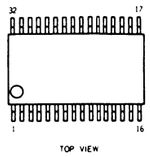
—Ref. No. PS-310 BOARD : 9000 series—



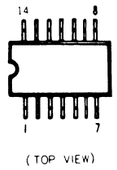
Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

5-3. SEMICONDUCTORS

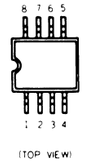
AN3900SC-E2



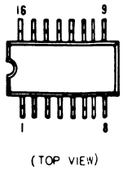
CXA8010M
LB1836M
M52684AFP
MC14069UBF
MC14081BF
NJM2209M
TL1596CNS



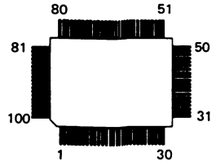
CAT35C202K
LM358PS
MC14577BF
NJM2233BM
NJM2234M
NJM2235M
NJM4558M



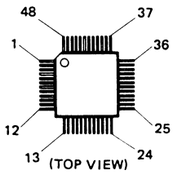
CXD1172AM
CXL1506M
HD14053BFP
MC14094BF



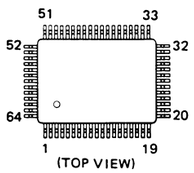
CF45000PJ
CF45001PJ
CXP80624-457Q-FP
MB889794B-187



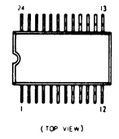
CX20034
CXA1208Q
CXA1481AQ
CXA1509AQ
MC141625FU



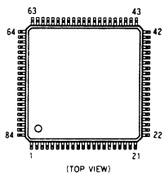
CXA1207AQ



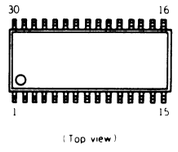
CXA1203M
CXA1410M



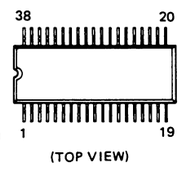
CXA1542Q



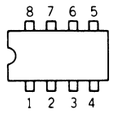
CXA8006M



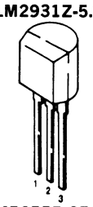
CXK1206AM



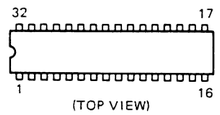
IR9431



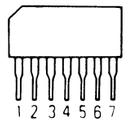
LM2931Z-5.0



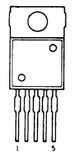
M50555-054FP



MA2820

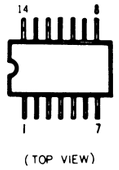


MC14052BF

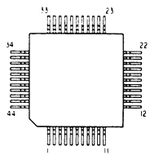


MCD002AM

SDA5642

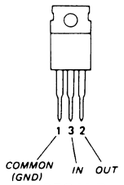


μPD75004-GB-562-3B4

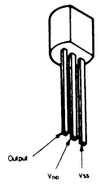


PQ05RF11
PQ05RF21
PQ09RF11
PQ12RF11
PQ30RV1

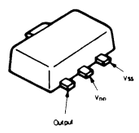
RC79M05FA



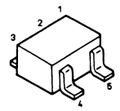
S-8053ALB



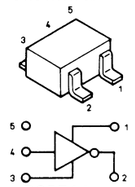
S-8054ALB-LM-S



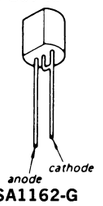
TC4S66F



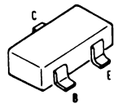
TC7SU04F



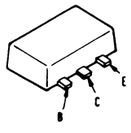
μPC574J



2SA1162-G
2SC1623-L5L6
2SC1623-L6
2SC2223-F13
2SC2412K-T-146-R
2SC3326N
2SD601A-Q
2SD1757K-RS
DTC114EK
DTC114TK
DTC144EK
DTC144TK
UN2111
UN2113
UN2210
UN2211
UN2213
UN2217

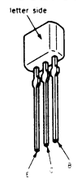


2SB798-DL

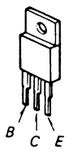


2SC2655

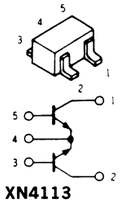
2SC2785-HFE



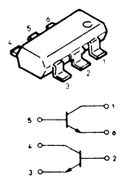
2SD1406-YGR



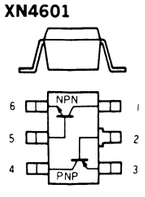
2SD773-34



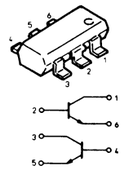
XN4113
XN4210
XN4213



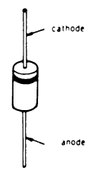
XN4312
XN4601



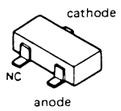
XN6501



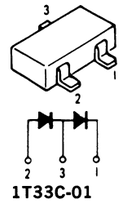
1SS83



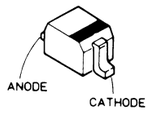
1SS196



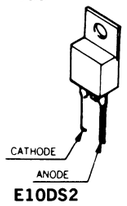
1SS226



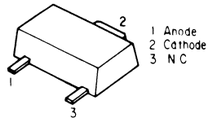
1T33C-01
MA110



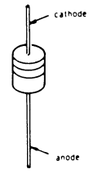
D5S4M



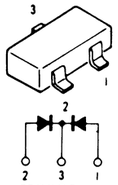
E10DS2
E10QS04



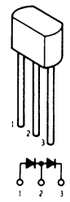
ERA82-004
ERA85-009
HZS30-2L
MTZJ-7.5B
RD9.1ES-B2
RD22ES-B2



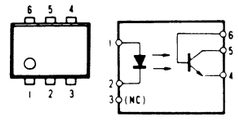
MA152WK
MA3075WA



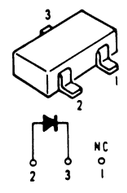
MC931



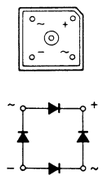
PC111LS



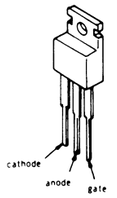
RD5.6M-B1
RD6.2M-B1
RD7.5M-B2
RD9.1M-B1
RD13M-B1



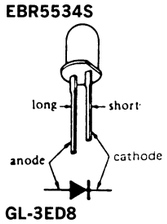
S2VB60-03L10



TF341S



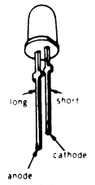
EBR5534S



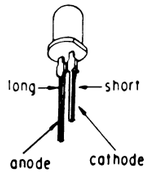
GL-3ED8

1 ANODE RED
2 CATHODE
3 ANODE GREEN

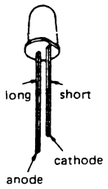
PY5504S-1



SEL1810A



TLY113AP



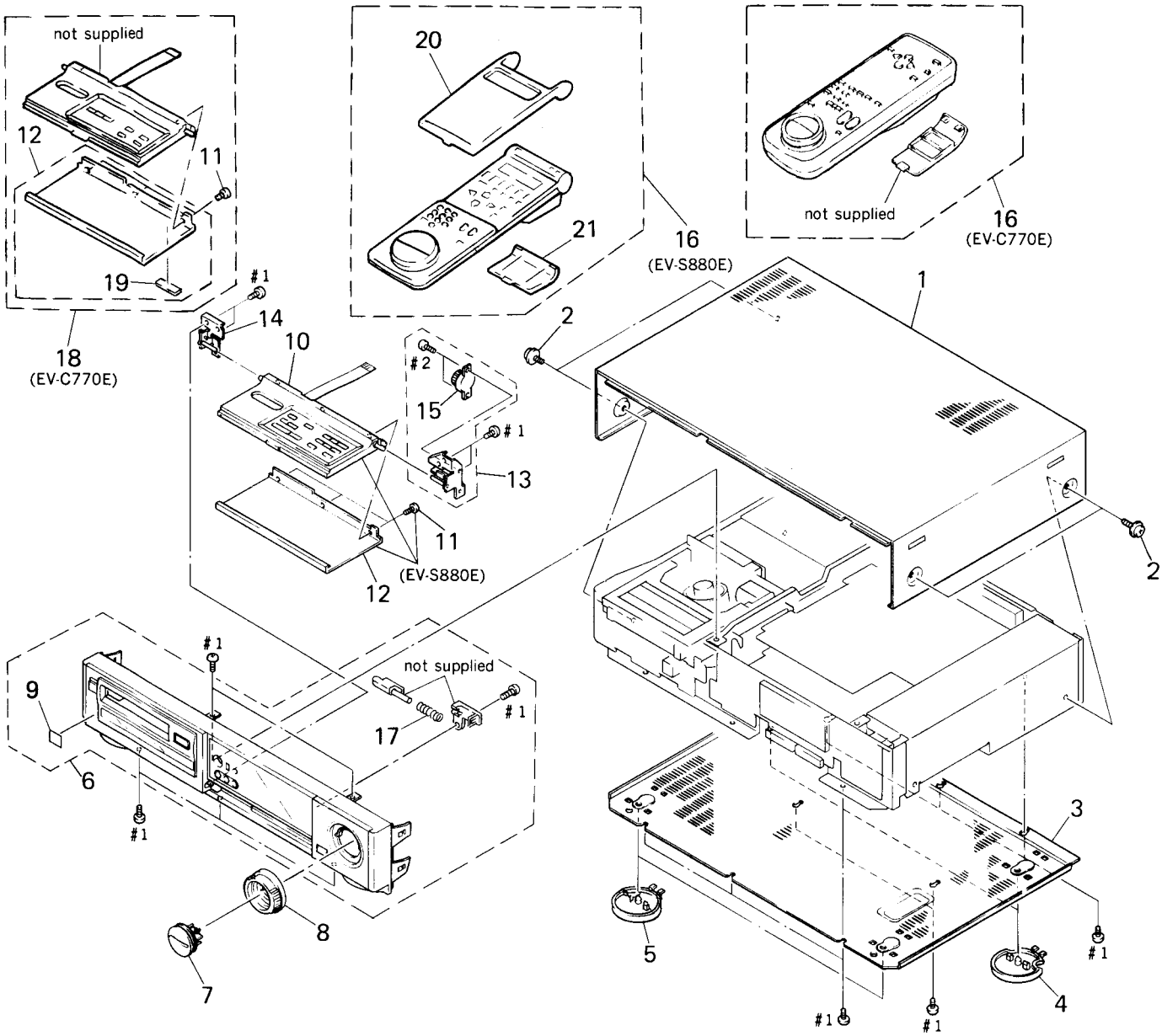
SECTION 6
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE)... (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Hardware (# mark) list is given in the last of this parts list.

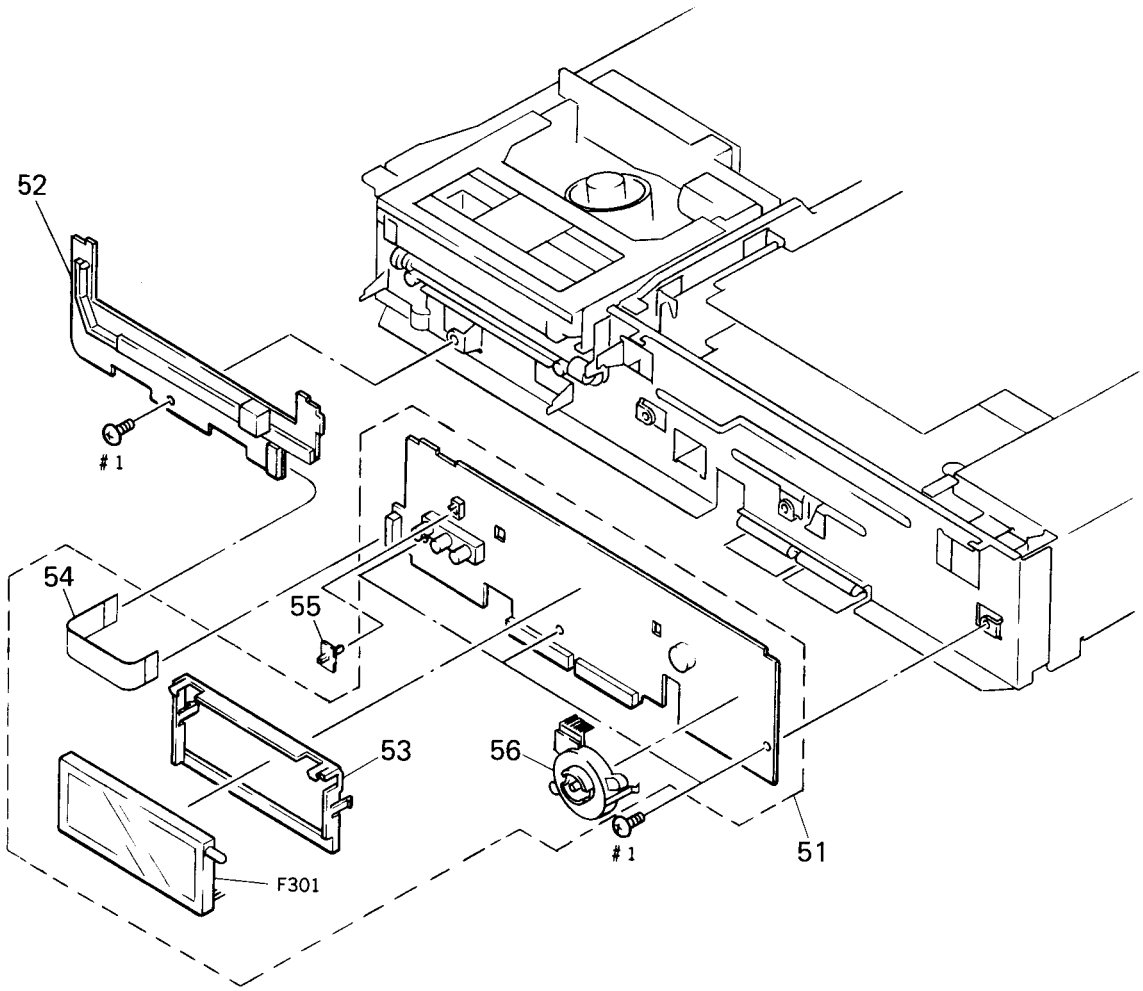
The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

6-1. FRONT PANEL AND CABINET ASSEMBLY (1)



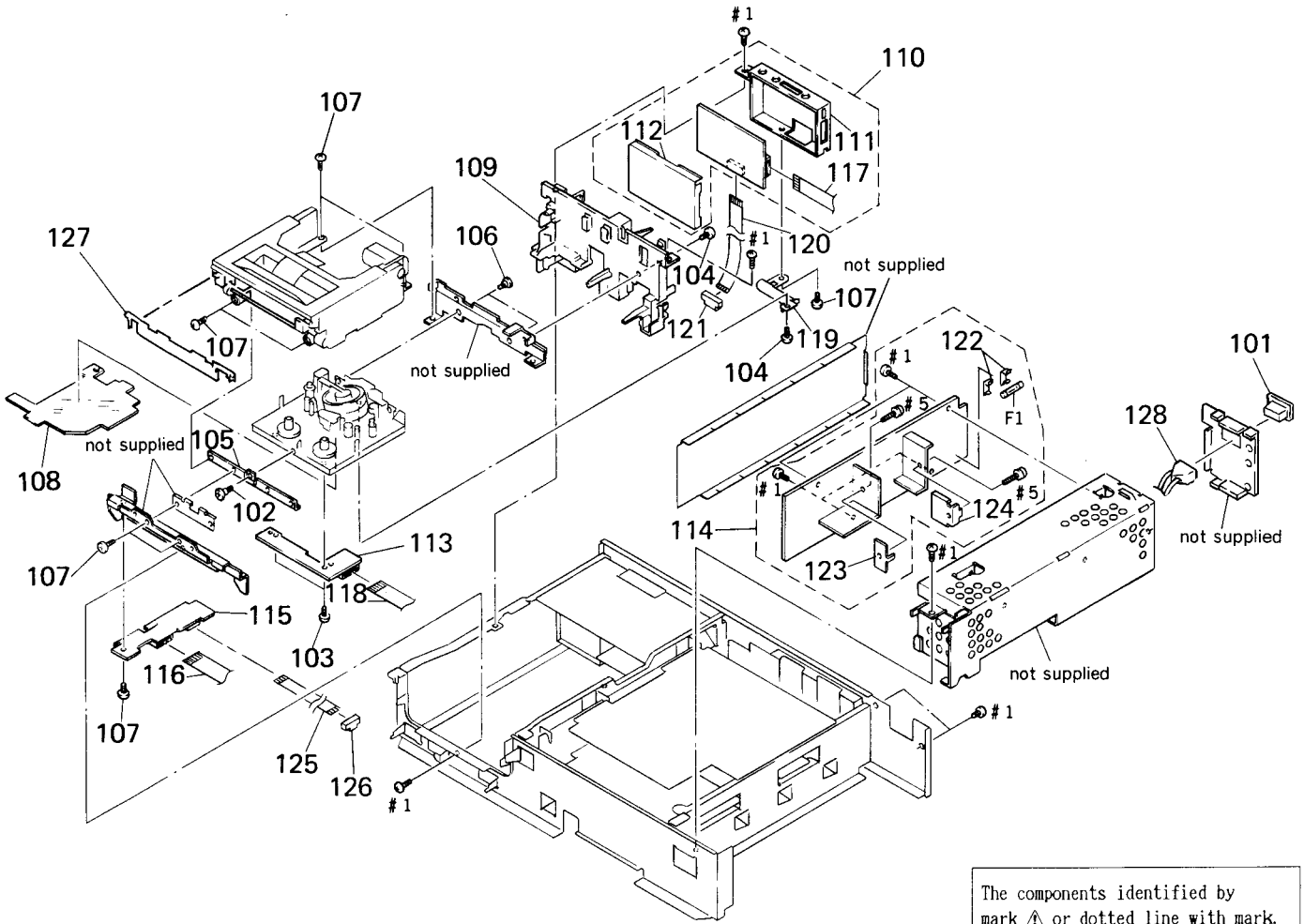
Ref. No.	Part No.	Description	Remark
* 1	X-3942-686-1	CASE ASSY, UPPER	
2	3-710-901-11	SCREW, TAPPING	
* 3	3-742-559-01	PLATE, BOTTOM	
4	3-947-345-11	INSULATOR (REAR)	
5	3-946-783-21	INSULATOR (DIA. 58X5)	
6	X-3942-654-1	PANEL ASSY, FRONT (EV-S880E)	
6	X-3942-655-1	PANEL ASSY, FRONT (EV-C770E)	
7	X-3941-295-1	BUTTON ASSY, FUNCTION	
8	3-944-572-11	RING, SHUTTLE	
* 9	3-703-713-41	STICKER, SONY SYMBOL (10)	
10	1-466-714-41	SWITCH BLOCK, CONTROL (EV-S880E)	
11	3-947-317-01	SCREW (M1.7X6)	
12	3-947-379-21	PLATE, ORNAMENTAL, DOOR (EV-S880E)	
12	X-3942-656-1	PLATE ASSY, ORNAMENTAL, DOOR (EV-C770E)	
13	X-3941-468-1	BRACKET (R) ASSY, DOOR	
14	X-3941-469-1	BRACKET (L) ASSY, DOOR	
15	3-712-786-31	DAMPER, OIL	
16	1-467-001-11	REMOTE COMMANDER (RMT-V134) (EV-S880E)	
16	1-467-002-11	REMOTE COMMANDER (RMT-V130H) (EV-C770E)	
17	3-308-717-00	SPRING, COMPRESSION	
18	A-7092-068-A	DOOR ASSY (EV-C770E)	
19	3-732-740-01	EMBLEM, HI8 (EV-C770E)	
20	3-953-578-01	DOOR (V134) (EV-S880E)	
21	3-746-029-01	COVER, BATTERY (EV-S880E)	

6-2. FRONT PANEL AND CABINET ASSEMBLY (2)



Ref. No.	Part No.	Description	Remark
* 51	A-7063-507-A	FR-80 BOARD, COMPLETE	
* 52	A-7063-506-A	FL-54 BOARD, COMPLETE (EV-S880E)	
* 52	A-7063-592-A	FL-54 BOARD, COMPLETE (EV-C770E)	
* 53	3-947-334-01	HOLDER, INDICATION TUBE	
54	1-691-836-11	CABLE, FLAT	
55	3-744-217-01	KNOB, SELECTION	
56	1-572-662-11	SWITCH, ROTARY	
F301	1-519-743-11	INDICATOR TUBE, FLUORESCENT	

6-3. MAIN CHASSIS ASSEMBLY

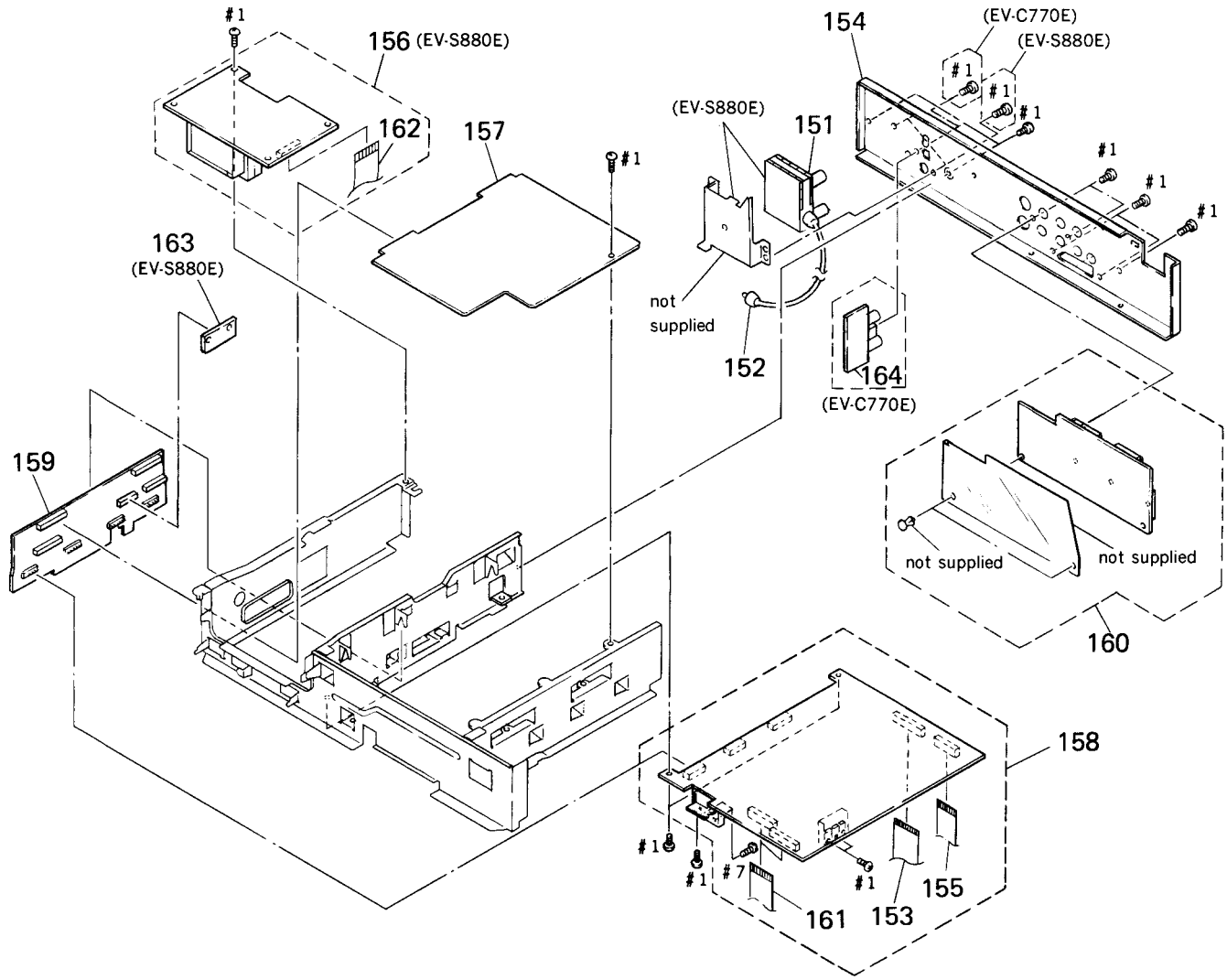


The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
⚠101	1-540-054-11	INLET, AC	
102	3-732-816-21	SCREW, STEP	
103	3-713-790-21	SCREW (M2X6), TAPPING, P3	
104	3-719-381-01	SCREW (M2X4)	
* 105	3-732-810-02	BRACKET (FRONT)	
106	3-732-816-01	SCREW, STEP	
107	3-732-817-01	SCREW (2X4.5), TAPPING	
* 108	3-948-771-01	COVER, DRUM	
* 109	3-944-236-01	FRAME, RP	
* 110	A-7063-511-A	RP-160 BOARD, COMPLETE	
* 111	3-947-333-01	CASE (MAIN), SHIELD, RP	
* 112	3-947-318-01	LID (A), RP SHIELD CASE	
* 113	A-7063-513-A	UC-16 BOARD, COMPLETE	
* 114	A-7063-516-A	PS-310 BOARD, COMPLETE (EV-S880E)	
* 114	A-7063-595-A	PS-310 BOARD, COMPLETE (EV-C770E)	

Ref. No.	Part No.	Description	Remark
* 115	A-7063-508-A	DC-53 BOARD, COMPLETE	
116	1-691-813-11	CABLE, FLAT	
117	1-691-815-11	CABLE, FLAT	
118	1-691-814-11	CABLE, FALT	
119	3-947-327-01	PLATE (B), GROUND, RP	
120	1-643-367-11	FP-471 FLEXIBLE BOARD	
121	1-569-347-11	CONNECTOR, FPC(TRANSLATION) 13P	
122	1-533-183-11	HOLDER, FUSE	
123	3-731-146-01	RETAINER (B), PS	
124	3-714-460-01	RETAINER, TRANSISTOR	
125	1-643-368-11	FP-472 FLEXIBLE BOARD	
126	1-569-346-11	CONNECTOR, FPC(TRANSLATION) 10P	
127	3-947-278-41	WINDOW, CASSETTE COMPARTMENT	
⚠128	3-742-521-21	COVER, 2P INLET	
⚠F1	1-576-227-21	FUSE, GLASS TUBE 1.6A 250V	

6-4. MAIN BOARD ASSEMBLY

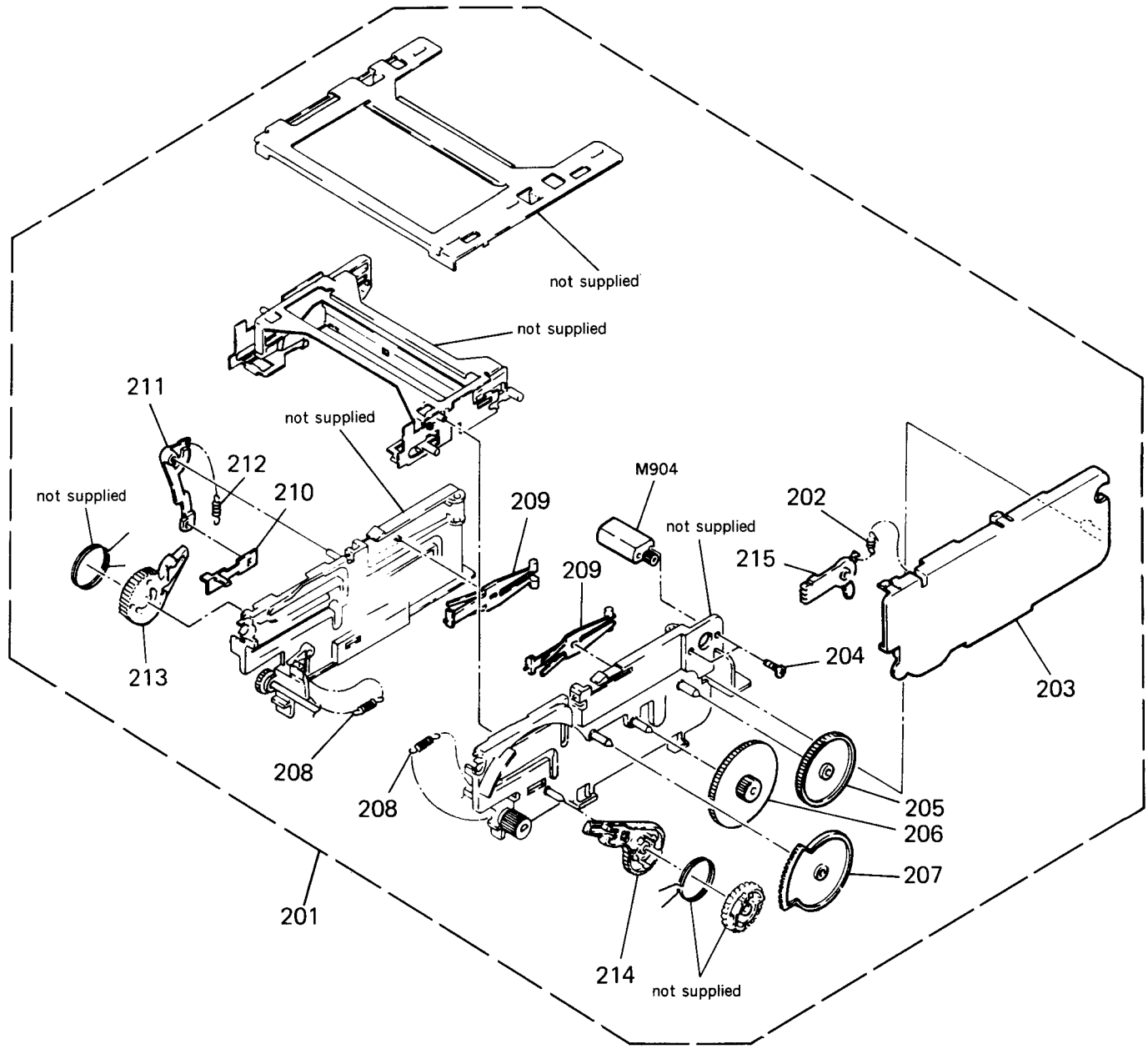


The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
⚠151	1-466-328-31	MODULATOR, RF (RFU-2027) (EV-S880E)	
152	1-555-110-00	CABLE, PIN (EV-S880E)	
153	1-751-030-11	CABLE, FLAT (FRS=12)	
* 154	3-944-237-81	FRAME, REAR (EV-S880E)	
155	1-751-029-11	CABLE, FLAT (FRS=11)	
* 156	A-7063-509-A	TU-100 BOARD, COMPLETE (EV-S880E)	
* 157	A-7063-505-A	VA-79 BOARD, COMPLETE	
* 158	A-7053-597-A	ST-48 BOARD, COMPLETE (EV-C770E)	
* 158	A-7063-514-A	ST-48 BOARD, COMPLETE (EV-S880E)	

Ref. No.	Part No.	Description	Remark
* 159	A-7063-515-A	IN-49 BOARD, COMPLETE (EV-S880E)	
* 159	A-7063-594-A	IN-49 BOARD, COMPLETE (EV-C770E)	
* 160	A-7063-510-A	RJ-41 BOARD, COMPLETE	
161	1-691-819-11	CABLE, FLAT	
162	1-575-454-11	WIRE, FLAT TYPE (28P)	
* 163	A-7063-517-A	VP-36 BOARD COMPLETE (EV-S880E)	
* 164	A-7063-593-A	RJ-44 BOARD, COMPLETE (EV-C770E)	

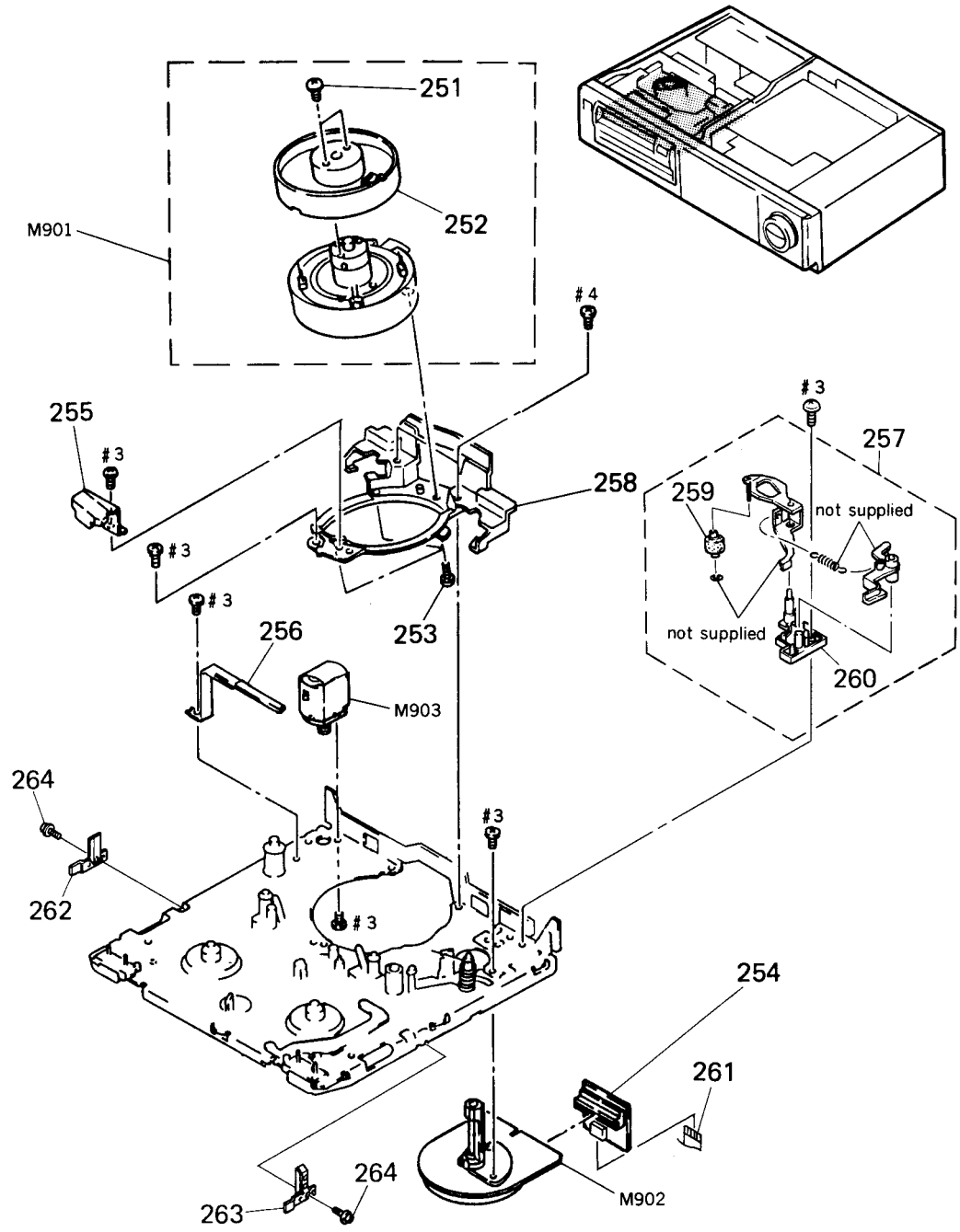
6-5. CASSETTE COMPARTMENT ASSEMBLY



Ref. No.	Part No.	Description	Remark
* 201	A-7091-647-A	CASSETTE COMPARTMENT ASSY, FL	
202	3-731-175-02	SPRING, TENSION	
203	3-732-804-03	COVER, GEAR	
204	3-730-141-01	SCREW (PSW) (2X4)	
205	3-731-182-01	GEAR (B), DECELERATION	
206	3-731-181-01	GEAR (A), DECELERATION	
207	3-731-192-01	GEAR, MIDWAY	
208	3-731-176-02	SPRING, TENSION	

Ref. No.	Part No.	Description	Remark
209	3-731-184-02	HOLDER LOCK	
210	3-731-189-01	SLIDER, LOCK	
211	3-731-188-01	ARM LOCK, DRIVING	
212	3-731-174-01	SPRING, TENSION	
213	X-3731-111-1	ARM (LEFT) ASSY, DRIVING	
214	X-3731-109-2	ARM (RIGHT) ASSY, DRIVING	
215	3-731-185-01	LINK, SWITCHING, DOOR	
M904	X-3731-108-1	FL MOTOR ASSY	

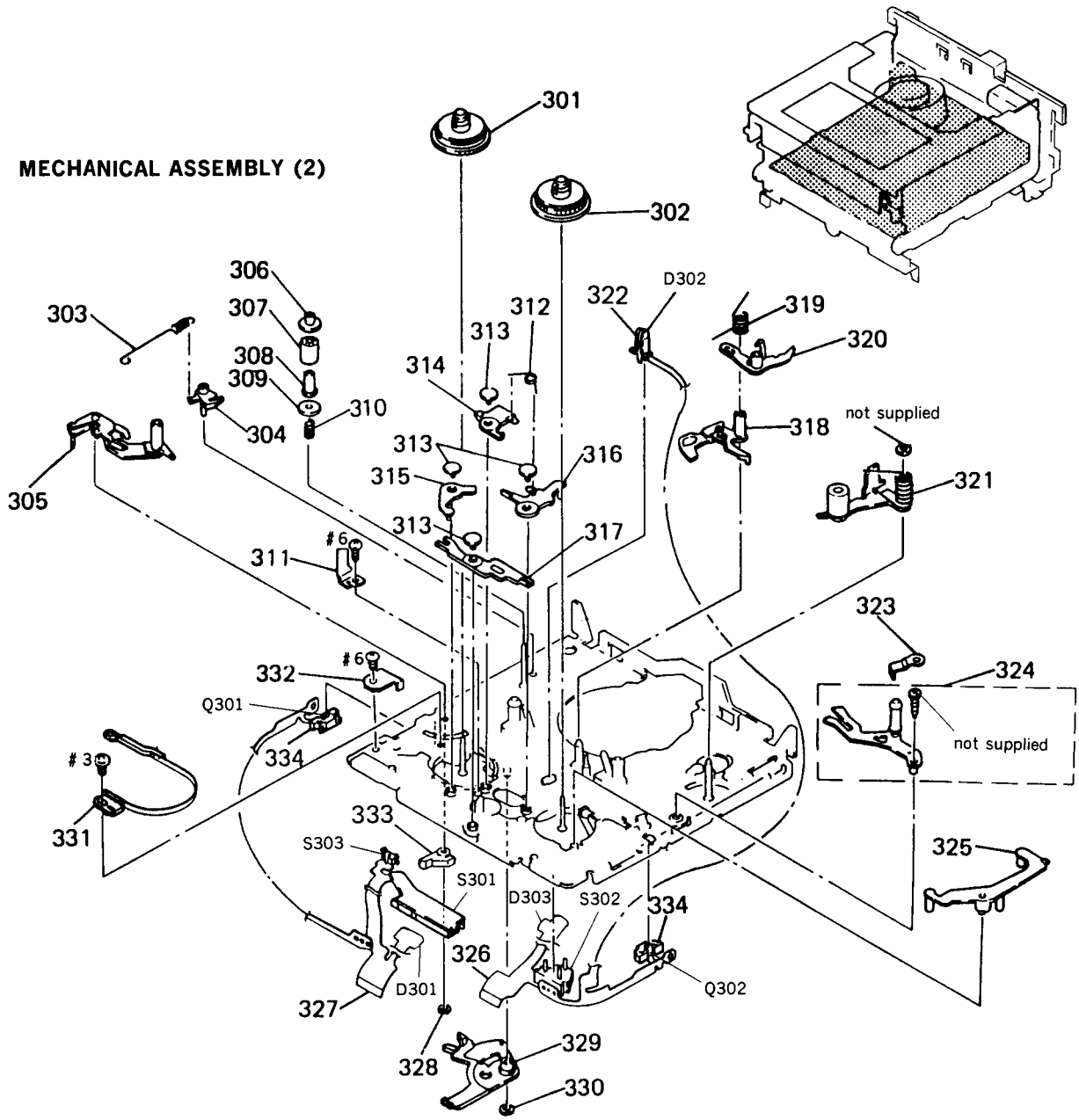
6-6. MECHANICAL ASSEMBLY (1)



Ref. No.	Part No.	Description	Remark
251	3-727-847-01	SCREW (M2X4), P1	
252	A-7049-611-A	DRUM ASSY, ROTARY (UPPER) (DGR-0A4-R)	
253	3-686-493-01	SCREW (M2X 5), P1	
* 254	A-7063-512-A	CC-78 BOARD, COMPLETE	
255	3-728-868-01	GUARD, GUIDE	
256	X-3728-864-1	GROUND ASSY, SHAFT	
257	A-7040-207-A	ROLLER BLOCK ASSY, HC	
258	X-3686-482-5	BASE ASSY, DRUM	
259	X-3728-861-1	ROLLER ASSY, HC	

Ref. No.	Part No.	Description	Remark
260	3-741-198-01	PLATE, HC	
261	1-691-812-11	CABLE, FLAT	
262	X-3726-867-1	PRISM (LEFT) ASSY	
263	X-3726-866-1	PRISM (RIGHT) ASSY	
264	3-732-087-31	SCREW (M1.4X1.8), SPECIAL HEAD	
M901	A-7048-671-A	DRUM ASSY (DGU-0A4A-R)	
M902	8-835-331-01	MOTOR, DC U-22A (CAPSTAN)	
M903	A-7040-324-A	MOTOR ASSY (N), THREADING (LOADING)	

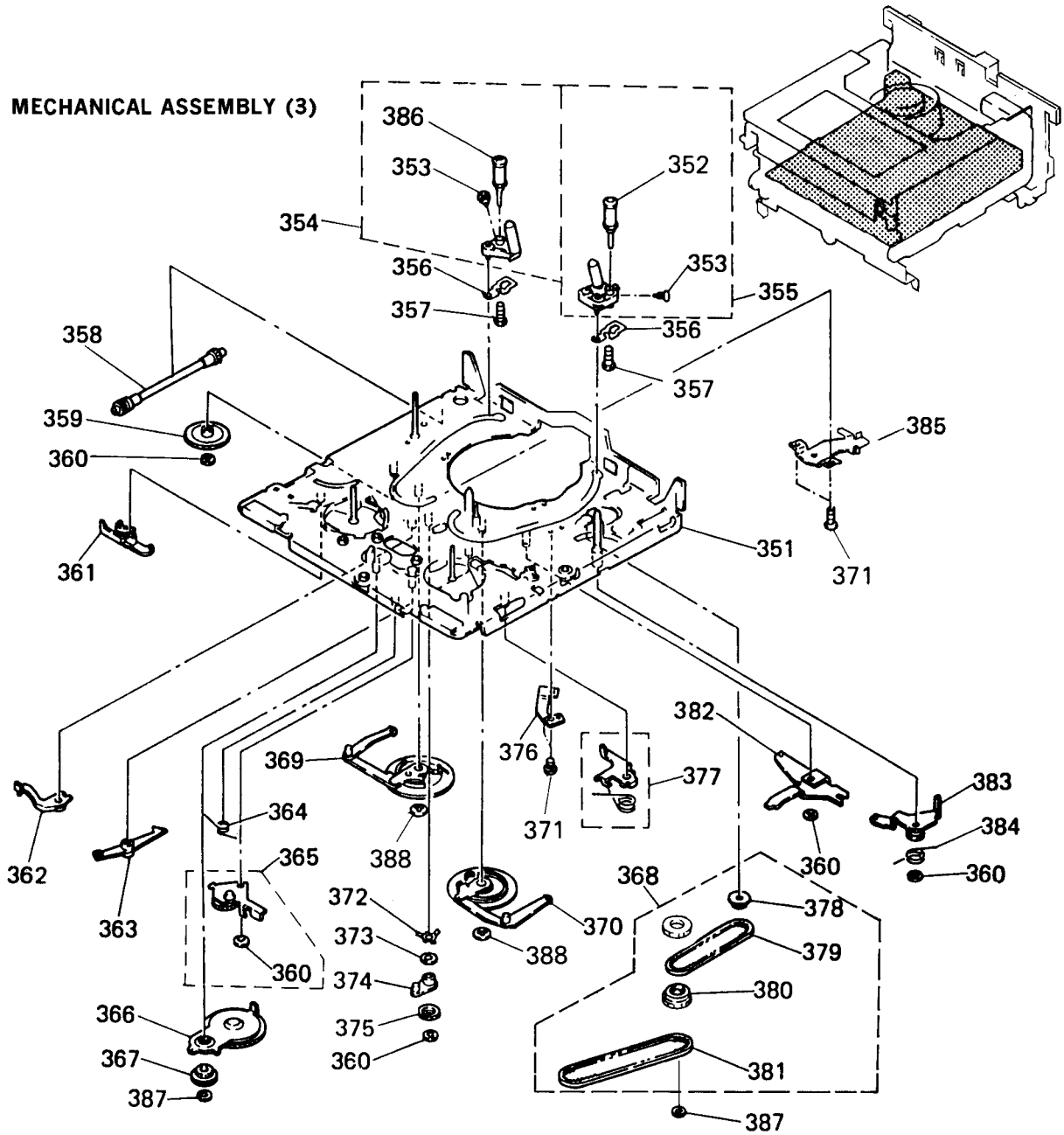
6-7. MECHANICAL ASSEMBLY (2)



Ref. No.	Part No.	Description	Remark
301	X-3728-851-1	TABLE ASSY, REEL, S	
302	X-3728-855-1	TABLE ASSY, REEL, T	
303	3-736-414-01	SPRING, TENSION	
304	3-728-855-03	ARM, ADJUSTMENT	
305	X-3728-867-1	ARM ASSY (S), TENSION REGULATOR	
306	3-726-884-01	FLANGE, UPPER, TG2	
307	3-726-883-21	ROLLER, TG2	
308	3-726-885-01	SLEEVE, TG2	
309	3-726-882-02	FLANGE, LOWER, TG2	
310	3-726-886-01	SPRING, COMPRESSION	
311	3-726-848-01	RETAINER, TL	
312	3-726-866-01	SPRING (ST), TORSION	
313	3-726-858-01	PIN, SHAFT RETAINER	
314	3-728-849-01	BRAKE, S	
315	3-726-852-01	BRAKE, LB	
316	3-728-850-01	BRAKE, T	
317	3-726-853-01	LEVER, LB	
318	3-728-875-01	STOPPER, RK	
319	3-726-864-01	SPRING (RK), TORSION	
320	3-728-852-02	ARM, RK STOPPER	
321	A-7040-219-A	ARM BLOCK ASSY, PINCH	

Ref. No.	Part No.	Description	Remark
* 322	3-948-326-01	HOLDER (N), LED	
323	3-728-808-01	SPRING, LEAF	
324	X-3728-869-1	ARM ASSY, TG7	
325	3-728-848-01	ARM, LB RELEASE	
326	1-628-061-12	FP-90 FLEXIBLE BOARD	
327	1-628-060-12	FP-89 FLEXIBLE BOARD	
328	3-321-393-11	WASHER, STOPPER	
329	X-3728-863-1	LEVER ASSY, SW	
330	3-726-829-01	WASHER, STOPPER	
331	X-3728-859-1	BAND ASSY, TENSION REGULATOR	
332	3-730-125-01	RETAINER, SW	
333	X-3728-857-1	STOPPER ASSY, TENSION REGULATOR	
334	3-728-869-02	HOLDER, SENSOR	
D301	8-719-820-44	DIODE TLP907-O(SONY2)	
D302	8-719-026-04	DIODE GL453JS	
D303	8-719-820-44	DIODE TLP907-O(SONY2)	
Q301	8-729-906-48	TRANSISTOR EE-TP109	
Q302	8-729-906-48	TRANSISTOR EE-TP109	
S301	1-572-173-11	SWITCH, SLIDE (ENCODER)	
S302	1-572-298-11	SWITCH, PUSH	
S303	1-571-099-11	SWITCH	

6-8. MECHANICAL ASSEMBLY (3)



Ref. No.	Part No.	Description	Remark
351	X-3728-862-1	CHASSIS ASSY, MECHANICAL	
352	X-3728-808-4	ROLLER ASSY (U) (PLATING), GUIDE	
353	3-726-822-03	SCREW (M1.4X2) (STEP), HEAD	
354	A-7040-204-H	COASTER (LEFT) BLOCK ASSY	
355	A-7040-217-E	COASTER (RIGHT) BLOCK ASSY (N1P)	
356	3-736-485-01	SPRING, LEAF, COSTER	
357	3-726-830-01	SCREW (M1.4X4) (THREE LOCK)	
358	X-3940-276-2	WORM ASSY	
359	3-744-109-01	GEAR, WHEEL	
360	3-726-829-01	WASHER, STOPPER	
361	3-728-842-01	LEVER, EJECT	
362	3-728-851-01	BRAKE, UL	
363	3-726-854-01	ARM, BRAKE RELEASE	
364	3-726-865-01	SPRING (LB), TORSION	
365	A-7040-225-A	GEAR BLOCK ASSY (N), LB	
366	X-3728-866-1	GEAR ASSY, RK	
367	X-3728-858-2	GEAR ASSY, RC	
368	X-3726-813-4	PULLEY (UPPER) ASSY, MIDWAY	
369	X-3728-842-1	GEAR (LEFT) ASSY, DRIVE	

Ref. No.	Part No.	Description	Remark
370	X-3728-843-1	GEAR (RIGHT) ASSY, DRIVE	
371	3-731-192-01	GEAR, MIDWAY	
372	3-726-867-01	SPRING, LEAF	
373	3-701-436-21	WASHER, POLYEHTHYLENE	
374	3-726-857-03	ARM, UL	
375	3-726-856-04	GEAR, UL	
* 376	3-726-805-01	REINFORCEMENT (TT)	
377	X-3726-808-3	BRAKE ASSY, TS	
378	X-3726-805-1	GEAR ASSY, JOINT	
379	3-728-866-11	BELT (S), TIMING	
380	3-741-196-02	PULLEY (LOWER), BELT MIDWAY	
381	3-741-197-01	BELT (L), TIMING	
382	3-941-322-01	LEVER, LOADING	
383	X-3940-279-1	ARM ASSY, PINCH SUB	
384	3-726-895-01	SPRING	
385	X-3940-278-1	REINFORCEMENT (SS) ASSY	
386	X-3726-879-5	ROLLER ASSY ((U)-NB), GUIDE	
387	3-321-393-11	WASHER, STOPPER	
388	3-669-465-00	WASHER (1.5), STOPPER	

SECTION 7
ELECTRICAL PARTS LIST

CC-78 DC-53 FL-54

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA . . : μA. . uPA. . : μPA. .
  uPB. . : μPB. . uPC. . : μPC. . uPD. . : μPD. .
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark
*	A-7063-512-A	CC-78 BOARD, COMPLETE (Ref. No 5,000 series)	
		**********	
		< CAPACITOR >	
C993	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V
C994	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V
C995	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V
C996	1-164-346-11	CERAMIC CHIP 1uF	16V
C997	1-164-346-11	CERAMIC CHIP 1uF	16V
		< CONNECTOR >	
CN921	1-691-068-21	HOUSING, CONNECTOR 9P	
* CN922	1-562-880-21	CONNECOTR, CARD EDGE 15P	
		< IC >	
IC990	8-759-823-65	IC MCD002AM	
		< RESISTOR >	
R990	1-216-689-11	METAL CHIP 39K 0.5% 1/10W	
**********			
*	A-7063-508-A	DC-53 BOARD, COMPLETE (Ref. No 5,000 series)	
		**********	
		< CONNECTOR >	
CN931	1-566-542-31	CONNECTOR, FPC (NON ZIF) 10P	
* CN932	1-691-073-21	HOUSING, CONNECTOR 14P	
* CN933	1-566-195-11	PIN, CONNECTOR (PC BOARD) 2P	
* CN934	1-566-195-11	PIN, CONNECTOR (PC BOARD) 2P	
**********			

Ref. No.	Part No.	Description	Remark
*	A-7063-506-A	FL-54 BOARD, COMPLETE (EV-S880E)	
*	A-7063-592-A	FL-54 BOARD, COMPLETE (EV-C770E) (Ref. No 4,000 series)	
		**********	
*	3-948-308-01	HOLDER, LED	
		< CAPACITOR >	
C101	1-163-038-00	CERAMIC CHIP 0.1uF	25V
		< CONNECTOR >	
* CN101	1-691-072-11	HOUSING, CONNECTOR 13P	
		< DIODE >	
D101	8-719-955-04	LED PY5504S-1 (CASSETTE)	
D102	8-719-802-02	LED TLY113AP (REW)	
D103	8-719-955-04	LED PY5504S-1 (RVS)	
D104	8-719-302-07	LED SEL1810A (PAUSE)	
D105	8-719-955-04	LED PY5504S-1 (PB)	
D106	8-719-802-02	LED TLY113AP (FF)	
D107	8-719-921-01	LED EBR5534S (REC)	
D108	8-719-921-01	LED EBR5534S (TIMER) (EV-S880E)	
D109	8-719-802-02	LED TLY113AP (VB)	
D110	8-719-955-04	LED PY5504S-1 (Hi8)	
D111	8-719-802-02	LED TLY113AP (VPS) (EV-S880E)	
D112	8-719-981-49	LED GL3ED8 (POWER/STANDBY)	
D114	8-719-400-18	DIODE MA152WK	
D115	8-719-400-18	DIODE MA152WK	
D116	8-719-400-18	DIODE MA152WK	
		< IC >	
IC101	8-741-100-47	IC SBX1610-09	
IC102	8-759-009-22	IC MC14094BF	
		< JUMPER RESISTOR >	
JR101	1-216-296-00	METAL CHIP 0 5%	1/8W
JR102	1-216-296-00	METAL CHIP 0 5%	1/8W
JR103	1-216-295-00	METAL CHIP 0 5%	1/10W
JR104	1-216-295-00	METAL CHIP 0 5%	1/10W
JR105	1-216-295-00	METAL CHIP 0 5%	1/10W

FL-54 **FP-89** **FP-90** **FR-80**

Ref.No.	Part No.	Description			Remark
JR106	1-216-296-00	METAL CHIP	0	5%	1/8W
JR107	1-216-296-00	METAL CHIP	0	5%	1/8W
JR108	1-216-296-00	METAL CHIP	0	5%	1/8W
JR109	1-216-296-00	METAL CHIP	0	5%	1/8W
JR110	1-216-295-00	METAL CHIP	0	5%	1/10W
JR111	1-216-296-00	METAL CHIP	0	5%	1/8W
JR112	1-216-296-00	METAL CHIP	0	5%	1/8W
JR113	1-216-296-00	METAL CHIP	0	5%	1/8W
JR114	1-216-296-00	METAL CHIP	0	5%	1/8W
		< TRANSISTOR >			
Q101	8-729-424-08	TRANSISTOR	UN2111		
Q102	8-729-421-22	TRANSISTOR	UN2211		
Q103	8-729-421-22	TRANSISTOR	UN2211		
Q104	8-729-421-22	TRANSISTOR	UN2211		
Q105	8-729-421-22	TRANSISTOR	UN2211		
Q106	8-729-421-22	TRANSISTOR	UN2211		
Q107	8-729-421-22	TRANSISTOR	UN2211	(EV-S880E)	
Q109	8-729-421-22	TRANSISTOR	UN2211		
Q110	8-729-421-22	TRANSISTOR	UN2211		
		< RESISTOR >			
R101	1-216-017-00	METAL CHIP	47	5%	1/10W
R102	1-216-030-00	METAL CHIP	160	5%	1/10W
R103	1-216-028-00	METAL CHIP	130	5%	1/10W
R104	1-216-031-00	METAL CHIP	180	5%	1/10W
R105	1-216-028-00	METAL CHIP	130	5%	1/10W
R106	1-216-030-00	METAL CHIP	160	5%	1/10W
R107	1-216-023-00	METAL CHIP	82	5%	1/10W
R108	1-216-023-00	METAL CHIP	82	5%	1/10W (EV-S880E)
R109	1-216-030-00	METAL CHIP	160	5%	1/10W
R110	1-216-028-00	METAL CHIP	130	5%	1/10W
R111	1-216-030-00	METAL CHIP	160	5%	1/10W (EV-S880E)
R112	1-216-029-00	METAL CHIP	150	5%	1/10W
R113	1-216-029-00	METAL CHIP	150	5%	1/10W
R114	1-216-073-00	METAL CHIP	10K	5%	1/10W
R115	1-216-238-00	METAL GLAZE	47K	5%	1/8W
		< SWITCH >			
S101	1-571-977-11	SWITCH, TACTIL (ON/STANDBY)			
S102	1-571-977-11	SWITCH, TACTIL (EJECT)			

****

Ref.No.	Part No.	Description	Remark
	1-628-060-12	FP-89 FLEXOBLE BOARD (Ref.No 5,000 series)	
		**********	
	3-728-869-02	HOLDER SENSOR	
		< DIODE >	
D301	8-719-820-44	DIODE TLP907-0 (SONY2)	
		< TRANSISTOR >	
Q301	8-729-906-48	TRANSISTOR EE-TP109	
		< SWITCH >	
S301	1-572-173-11	SWITCH SLIDE (ENCODER)	
S303	1-571-099-11	SWITCH (CC DOWN)	

****

	1-628-061-12	FP-90 FLEXOBLE BOARD (Ref.No 5,000 series)	
		**********	
	3-728-869-02	HOLDER SENSOR	
		< DIODE >	
D302	8-719-026-04	DIODE GL-453JS (including LED HOLDER)	
D303	8-719-820-41	DIODE TLP907-0 (SONY2)	
		< TRANSISTOR >	
Q302	8-729-906-48	TRANSISTOR EE-TP109	
		< SWITCH >	
S302	1-572-298-11	SWITCH PUSH (REC PROOF/TAPE SELECT)	

****

*	A-7063-507-A	FR-80 BOARD, COMPLETE (Ref.No 4,000 series)	
		**********	
	1-572-662-11	SWITCH, ROTARY	
	1-691-836-11	CABLE, FLAT	
	3-831-441-XX	CUSHION (5)	
*	3-947-334-01	HOLDER, INDICATION TUBE	
*	3-947-530-01	HOLDER, TERMINAL, S	
		< BUZZER >	
BZ301	1-529-080-11	BUZZER, PIEZOELECTRIC	
		< CAPACITOR >	
C303	1-163-245-11	CERAMIC CHIP 56PF 5% 50V	
C304	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	

Ref. No.	Part No.	Description			Remark
C305	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C306	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C308	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C309	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C310	1-163-245-11	CERAMIC CHIP	56PF	5%	50V
		< CONNECTOR >			
CN301	1-563-633-11	HOUSING, CONNECTOR 30P			
CN302	1-563-633-11	HOUSING, CONNECTOR 30P			
CN303	1-569-930-11	HOUSING, CONNECTOR 13P			
CN304	1-580-850-11	CONNECTOR (DMS) 8P			
		< DIODE >			
D301	8-719-420-81	DIODE MA3075WA			
D302	8-719-420-81	DIODE MA3075WA			
D305	8-719-105-99	DIODE RD6.2M-B1			
D306	8-719-105-90	DIODE RD5.6M-B1			
D308	8-719-105-99	DIODE RD6.2M-B1			
D320	8-719-106-43	DIODE RD9.1M-B1			
		< FUSE >			
F301	1-519-743-11	INDICATOR TUBE, FLUORESCENT			
		< FERRITE BEAD >			
FB301	1-543-256-11	BEAD, FERRITE			
FB302	1-543-256-11	BEAD, FERRITE			
		< JACK >			
J301	1-566-850-31	CONNECTOR, (S) TERMINAL 4P (S VIDEO)			
J302	1-580-845-11	JACK, PIN 3P (VIDEO/AUDIO)			
J303	1-568-800-11	JACK, ULTRA SMALL (CONTROL L)			
		< JUMPER RESISTOR >			
JR302	1-216-296-00	METAL CHIP	0	5%	1/8W
JR303	1-216-296-00	METAL CHIP	0	5%	1/8W
JR304	1-216-296-00	METAL CHIP	0	5%	1/8W
JR306	1-216-296-00	METAL CHIP	0	5%	1/8W
JR307	1-216-296-00	METAL CHIP	0	5%	1/8W
JR308	1-216-296-00	METAL CHIP	0	5%	1/8W
JR309	1-216-296-00	METAL CHIP	0	5%	1/8W
JR310	1-216-296-00	METAL CHIP	0	5%	1/8W
JR311	1-216-296-00	METAL CHIP	0	5%	1/8W
JR312	1-216-296-00	METAL CHIP	0	5%	1/8W
JR313	1-216-296-00	METAL CHIP	0	5%	1/8W
JR314	1-216-295-00	METAL CHIP	0	5%	1/10W
JR315	1-216-295-00	METAL CHIP	0	5%	1/10W
JR316	1-216-296-00	METAL CHIP	0	5%	1/8W
JR317	1-216-296-00	METAL CHIP	0	5%	1/8W
JR318	1-216-295-00	METAL CHIP	0	5%	1/10W
JR319	1-216-295-00	METAL CHIP	0	5%	1/10W
JR320	1-216-295-00	METAL CHIP	0	5%	1/10W
JR321	1-216-295-00	METAL CHIP	0	5%	1/10W
JR322	1-216-296-00	METAL CHIP	0	5%	1/8W
JR323	1-216-296-00	METAL CHIP	0	5%	1/8W
JR324	1-216-296-00	METAL CHIP	0	5%	1/8W
		< RESISTOR >			
R301	1-216-017-00	METAL CHIP	47	5%	1/10W
R302	1-216-022-00	METAL CHIP	75	5%	1/10W
R303	1-216-017-00	METAL CHIP	47	5%	1/10W
R304	1-216-022-00	METAL CHIP	75	5%	1/10W
R305	1-216-295-00	METAL CHIP	0	5%	1/10W
R306	1-216-022-00	METAL CHIP	75	5%	1/10W
R307	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R308	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R309	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R310	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R311	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R312	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R314	1-216-295-00	METAL CHIP	0	5%	1/10W
R316	1-216-295-00	METAL CHIP	0	5%	1/10W
R317	1-216-295-00	METAL CHIP	0	5%	1/10W
R318	1-216-295-00	METAL CHIP	0	5%	1/10W
R319	1-216-295-00	METAL CHIP	0	5%	1/10W
R320	1-216-295-00	METAL CHIP	0	5%	1/10W
R321	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R322	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
		< SWITCH >			
S301	1-571-977-11	SWITCH, TACTIL (CL)			
S302	1-571-977-11	SWITCH, TACTIL (PAUSE)			
S303	1-570-854-11	SWITCH, SLIDE (COMMAND MODE)			

****

* A-7063-515-A IN-49 BOARD, COMPLETE (EV-S880E)
* A-7063-594-A IN-49 BOARD, COMPLETE (EV-C770E)
(Ref. No 4,000 series)

****

< CONNECTOR >

CN901	1-568-219-11	PIN, CONNECTOR 22P
CN902	1-568-219-11	PIN, CONNECTOR 22P
* CN903	1-565-060-11	PIN, CONNECTOR 16P
* CN904	1-564-988-11	PIN, CONNECTOR 14P
* CN905	1-568-098-11	CONNECTOR (PLUG) 30P
* CN906	1-568-098-11	CONNECTOR (PLUG) 30P
CN907	1-563-613-11	CONNECTOR, FLEXIBLE 10P
CN908	1-566-128-11	CONNECTOR, BOARD 10P (EV-S880E)

Ref. No.	Part No.	Description			Remark
CN910	1-506-482-11	PIN, CONNECTOR 3P			
CN911	1-506-470-11	PIN, CONNECTOR 5P			(EV-C770E)
		< JUMPER RESISTOR >			
JR901	1-216-295-00	METAL CHIP	0	5%	1/10W
JR902	1-216-295-00	METAL CHIP	0	5%	1/10W
JR904	1-216-295-00	METAL CHIP	0	5%	1/10W
JR905	1-216-295-00	METAL CHIP	0	5%	1/10W
JR906	1-216-295-00	METAL CHIP	0	5%	1/10W
JR907	1-216-296-00	METAL CHIP	0	5%	1/8W
JR909	1-216-296-00	METAL CHIP	0	5%	1/8W
JR910	1-216-296-00	METAL CHIP	0	5%	1/8W
JR912	1-216-296-00	METAL CHIP	0	5%	1/8W
JR913	1-216-295-00	METAL CHIP	0	5%	1/10W
JR914	1-216-295-00	METAL CHIP	0	5%	1/10W
JR916	1-216-296-00	METAL CHIP	0	5%	1/8W
JR920	1-216-296-00	METAL CHIP	0	5%	1/8W
JR921	1-216-296-00	METAL CHIP	0	5%	1/8W
JR922	1-216-295-00	METAL CHIP	0	5%	1/10W
JR923	1-216-296-00	METAL CHIP	0	5%	1/8W
JR924	1-216-296-00	METAL CHIP	0	5%	1/8W
JR930	1-216-295-00	METAL CHIP	0	5%	1/10W
JR931	1-216-295-00	METAL CHIP	0	5%	1/10W
JR950	1-216-295-00	METAL CHIP	0	5%	1/10W
JR951	1-216-295-00	METAL CHIP	0	5%	1/10W
		< CLAMP >			
* LP001	3-683-631-01	CLAMP			
* LP002	3-683-631-01	CLAMP			
		< RESISTOR >			
R902	1-216-295-00	METAL CHIP	0	5%	1/10W
R903	1-216-295-00	METAL CHIP	0	5%	1/10W (EV-C770E)
R905	1-216-295-00	METAL CHIP	0	5%	1/10W (EV-C770E)

****

Ref. No.	Part No.	Description			Remark
*	A-7063-516-A	PS-310 BOARD, COMPLETE			(EV-S880E)
*	A-7063-595-A	PS-310 BOARD, COMPLETE			(EV-C770E) (Ref. No 9,000 series)
		**********			
	1-533-183-11	HOLDER, FUSE			
*	3-714-460-01	RETAINER, TRANSISTOR			
	3-731-146-01	RETAINER (B), PS			
	7-628-253-40	SCREW +PS 2X10			
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3			
		< CAPACITOR >			
⚠C001	1-136-527-12	FILM	0.47uF	20%	125V
⚠C002	1-137-525-11	FILM	0.1uF	20%	125V
⚠C003	1-162-599-12	CERAMIC	0.0047uF	20%	400V
⚠C004	1-162-599-12	CERAMIC	0.0047uF	20%	400V
⚠C005	1-162-599-12	CERAMIC	0.0047uF	20%	400V
⚠C007	1-126-538-11	ELECT	100uF	20%	400V
C008	1-136-208-11	FILM	0.068uF	10%	630V
C009	1-162-558-11	CERAMIC	100PF	10%	2KV
C010	1-130-495-00	MYLAR	0.1uF	5%	50V
C011	1-126-588-11	ELECT	1000uF	20%	16V
C012	1-126-587-11	ELECT	330uF	20%	16V
C014	1-126-588-11	ELECT	1000uF	20%	16V
C015	1-126-376-11	ELECT	470uF	20%	25V
C016	1-126-373-11	ELECT	470uF	20%	10V
C018	1-128-449-91	ELECT	0.001F	20%	10V
C019	1-123-875-11	ELECT	10uF	20%	50V
C020	1-124-126-00	ELECT	47uF	20%	10V
C021	1-102-125-00	CERAMIC	4700PF	10%	50V
C024	1-124-570-11	ELECT	220uF	20%	16V
C025	1-126-335-11	ELECT	220uF	20%	10V
C026	1-126-335-11	ELECT	220uF	20%	10V
C027	1-126-803-11	ELECT	47uF	20%	50V (EV-S880E)
C029	1-124-510-11	ELECT	220uF	20%	35V
C031	1-161-055-00	CERAMIC	0.022uF	10%	50V
C041	1-136-153-00	FILM	0.01uF	5%	50V
C042	1-126-588-11	ELECT	1000uF	20%	16V
C051	1-162-599-12	CERAMIC	0.0047uF	20%	400V
C052	1-162-599-12	CERAMIC	0.0047uF	20%	400V
⚠C053	1-162-599-12	CERAMIC	0.0047uF	20%	400V
⚠C054	1-162-599-12	CERAMIC	0.0047uF	20%	400V
C060	1-164-085-11	CERAMIC	0.001uF	10%	50V
		< CONNECTOR >			
* CN001	1-564-037-11	PIN, CONNECTOR 12P			
CN002	1-506-484-11	PIN, CONNECTOR 5P			

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description				Remark
		< DIODE >				
⚠D001	8-719-510-31	DIODE	S2VB60-03L10			
⚠D002	8-719-500-70	DIODE	D5S4M			
⚠D003	8-719-027-33	DIODE	THYRISTOR TF341S			
D004	8-719-110-57	DIODE	RD22ES-B2			
⚠D007	8-719-987-87	DIODE	ERA85-009			
⚠D008	8-719-500-70	DIODE	D5S4M			
⚠D009	8-719-913-44	DIODE	ERA82-004			
D012	8-719-913-44	DIODE	ERA82-004			
D013	8-719-901-83	DIODE	1SS83 (EV-S880E)			
D014	8-719-901-83	DIODE	1SS83			
D015	8-719-110-13	DIODE	RD9.1ES-B2			
D016	8-719-921-63	DIODE	MTZJ-7.5B			
D017	8-719-000-12	DIODE	MC931			
D018	8-719-934-22	LED	HZS30-2L			
		< FUSE >				
⚠F001	1-576-227-21	FUSE (H.B.C.) 1.6A				
		< IC >				
⚠IC001	8-759-979-49	IC	MA2820			
⚠IC002	8-719-987-48	DIODE	PC111LS			
⚠IC003	8-759-927-49	IC	IR9431			
⚠IC005	8-759-513-71	IC	PQ05RF21			
⚠IC006	8-759-982-52	IC	RC79M05FA			
		< COIL >				
⚠L001	1-424-121-11	TRANSFORMER, LINE FILTER				
L002	1-421-918-11	COIL, CHOKE 10uH				
L003	1-421-918-11	COIL, CHOKE 10uH				
L005	1-410-667-31	INDUCTOR 22uH				
		< IC LINK >				
⚠PS001	1-532-675-21	LINK, IC 1.5A				
		< TRANSISTOR >				
Q004	8-729-119-78	TRANSISTOR	2SC2785-HFE			
⚠Q005	8-729-265-52	TRANSISTOR	2SC2655			
		< RESISTOR >				
⚠R002	1-217-294-00	WIREWOUND	4.7	10%	5W	F
R003	1-215-927-00	METAL OXIDE	47K	5%	3W	F
R005	1-260-041-11	CARBON	680K	5%	1/2W	
R007	1-215-884-11	METAL OXIDE	47	5%	2W	F
⚠R008	1-212-887-00	FUSIBLE	180	5%	1/4W	F
R009	1-215-884-11	METAL OXIDE	47	5%	2W	F
R010	1-249-402-11	CARBON	56	5%	1/4W	F
R011	1-215-431-00	METAL	2.7K	1%	1/6W	
R012	1-215-429-00	METAL	2.2K	1%	1/6W	
R013	1-249-405-11	CARBON	100	5%	1/4W	F
⚠R021	1-219-162-11	FUSIBLE	3.3	5%	1/4W	F
R022	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R023	1-249-415-11	CARBON	680	5%	1/4W	F
R024	1-249-405-11	CARBON	100	5%	1/4W	F
R025	1-249-407-11	CARBON	150	5%	1/4W	F
R030	1-249-405-11	CARBON	100	5%	1/4W	F
R032	1-215-927-00	METAL OXIDE	47K	5%	3W	F
R035	1-215-397-00	METAL	100	1%	1/6W	
R037	1-215-883-11	METAL OXIDE	33	5%	2W	F
R038	1-249-437-11	CARBON	47K	5%	1/4W	
R039	1-249-426-11	CARBON	5.6K	5%	1/4W (EV-C770E)	
R039	1-249-429-11	CARBON	10K	5%	1/4W (EV-S880E)	
R040	1-249-417-11	CARBON	1K	5%	1/4W	F
R041	1-249-421-11	CARBON	2.2K	5%	1/4W	F
		< TRANSFORMER >				
⚠T001	1-423-551-11	TRANSFORMER, CONVERTER				
⚠T002	1-423-552-11	TRANSFORMER, CONVERTER				
**********						
*	A-7063-510-A	RJ-41 BOARD, COMPLETE (Ref. No 4,000 series)				
		**********				
*	3-952-775-01	PLATE, GROUND, RJ				
		< CAPACITOR >				
C501	1-163-245-11	CERAMIC CHIP	56PF	5%	50V	
C503	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C504	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V	
C505	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V	
C506	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C507	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V	
C508	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V	
C509	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C510	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C511	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C512	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V	
C513	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V	
C514	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C515	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C516	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C519	1-163-245-11	CERAMIC CHIP	56PF	5%	50V	
C521	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V	
C522	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V	
C523	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

RJ-41 **RJ-44**

Ref. No.	Part No.	Description			Remark
		< CONNECTOR >			
CN501	1-563-624-11	HOUSING, CONNECTOR 21P			
CN502	1-563-614-11	HOUSING, CONNECTOR 11P			
		< JACK >			
CNJ501	1-568-016-11	SOCKET, PIN 21P (LINE OUT2, EURO AV)			
CNJ502	1-537-506-11	TERMINAL BLOCK, (S) 8P (LINE IN1, LINE OUT1)			
		< DIODE >			
D503	8-719-106-43	DIODE RD9.1M-B1			
D504	8-719-105-90	DIODE RD5.6M-B1			
D509	8-719-105-90	DIODE RD5.6M-B1			
D515	8-719-420-81	DIODE MA3075WA			
D516	8-719-420-81	DIODE MA3075WA			
D517	8-719-420-81	DIODE MA3075WA			
D520	8-719-420-81	DIODE MA3075WA			
D521	8-719-420-81	DIODE MA3075WA			
D522	8-719-420-81	DIODE MA3075WA			
D525	8-719-420-81	DIODE MA3075WA			
D526	8-719-420-81	DIODE MA3075WA			
D527	8-719-420-81	DIODE MA3075WA			
D531	8-719-106-43	DIODE RD9.1M-B1			
		< JACK >			
J501	1-507-792-31	JACK (CONTROL S IN)			
		< JUMPER RESISTOR >			
JR501	1-216-296-00	METAL CHIP	0	5%	1/8W
JR502	1-216-296-00	METAL CHIP	0	5%	1/8W
JR503	1-216-296-00	METAL CHIP	0	5%	1/8W
JR504	1-216-296-00	METAL CHIP	0	5%	1/8W
JR505	1-216-296-00	METAL CHIP	0	5%	1/8W
JR506	1-216-296-00	METAL CHIP	0	5%	1/8W
JR507	1-216-295-00	METAL CHIP	0	5%	1/10W
JR508	1-216-296-00	METAL CHIP	0	5%	1/8W
JR509	1-216-296-00	METAL CHIP	0	5%	1/8W
JR510	1-216-296-00	METAL CHIP	0	5%	1/8W
JR511	1-216-296-00	METAL CHIP	0	5%	1/8W
JR512	1-216-296-00	METAL CHIP	0	5%	1/8W
JR513	1-216-296-00	METAL CHIP	0	5%	1/8W
JR514	1-216-296-00	METAL CHIP	0	5%	1/8W
JR515	1-216-295-00	METAL CHIP	0	5%	1/10W
JR516	1-216-295-00	METAL CHIP	0	5%	1/10W
JR517	1-216-296-00	METAL CHIP	0	5%	1/8W
JR518	1-216-296-00	METAL CHIP	0	5%	1/8W
JR519	1-216-296-00	METAL CHIP	0	5%	1/8W
JR520	1-216-296-00	METAL CHIP	0	5%	1/8W

Ref. No.	Part No.	Description			Remark
JR521	1-216-296-00	METAL CHIP	0	5%	1/8W
JR522	1-216-296-00	METAL CHIP	0	5%	1/8W
JR523	1-216-295-00	METAL CHIP	0	5%	1/10W
JR524	1-216-296-00	METAL CHIP	0	5%	1/8W
JR525	1-216-296-00	METAL CHIP	0	5%	1/8W
JR526	1-216-295-00	METAL CHIP	0	5%	1/10W
JR527	1-216-296-00	METAL CHIP	0	5%	1/8W
JR528	1-216-296-00	METAL CHIP	0	5%	1/8W
JR530	1-216-296-00	METAL CHIP	0	5%	1/8W
		< COIL >			
L501	1-412-390-21	INDUCTOR CHIP 0uH			
L502	1-412-002-31	INDUCTOR CHIP 4.7uH			
L503	1-412-002-31	INDUCTOR CHIP 4.7uH			
		< RESISTOR >			
R501	1-216-041-00	METAL CHIP	470	5%	1/10W
R502	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R504	1-216-022-00	METAL CHIP	75	5%	1/10W
R505	1-216-022-00	METAL CHIP	75	5%	1/10W
R506	1-216-022-00	METAL CHIP	75	5%	1/10W
R507	1-216-049-00	METAL CHIP	1K	5%	1/10W
R508	1-216-049-00	METAL CHIP	1K	5%	1/10W
R509	1-216-033-00	METAL CHIP	220	5%	1/10W
R510	1-216-033-00	METAL CHIP	220	5%	1/10W
R511	1-216-041-00	METAL CHIP	470	5%	1/10W
R512	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R513	1-216-017-00	METAL CHIP	47	5%	1/10W
R514	1-216-017-00	METAL CHIP	47	5%	1/10W
R518	1-216-295-00	METAL CHIP	0	5%	1/10W
R519	1-216-295-00	METAL CHIP	0	5%	1/10W
R520	1-216-295-00	METAL CHIP	0	5%	1/10W
R522	1-216-295-00	METAL CHIP	0	5%	1/10W
R523	1-216-295-00	METAL CHIP	0	5%	1/10W
R524	1-216-295-00	METAL CHIP	0	5%	1/10W
R525	1-216-295-00	METAL CHIP	0	5%	1/10W
R526	1-216-295-00	METAL CHIP	0	5%	1/10W
R527	1-216-295-00	METAL CHIP	0	5%	1/10W

****

* A-7063-593-A RJ-44 BOARD, COMPLETE (EV-C770E ONLY)
(Ref. No 4,000 series)

****

< CAPACITOR >

C701	1-126-157-11	ELECT	10uF	20%	16V
C702	1-163-031-11	CERAMIC CHIP	0.01uF		50V

Ref. No.	Part No.	Description			Remark
		< CONNECTOR >			
CN701	1-506-470-11	PIN, CONNECTOR 5P			
		< DIODE >			
D701	8-719-106-79	DIODE RD13M-B1			
D702	8-719-420-81	DIODE MA3075WA			
D703	8-719-420-81	DIODE MA3075WA			
		< JACK >			
J701	1-537-431-11	TERMINAL BOARD (LINE OUT3)			
		< TRANSISTOR >			
Q701	8-729-422-27	TRANSISTOR 2SD601A-Q			
Q702	8-729-101-07	TRANSISTOR 2SB798-DL			
		< RESISTOR >			
R701	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R702	1-216-079-00	METAL CHIP	18K	5% 1/10W	
R703	1-216-138-00	METAL CHIP	3.3	5% 1/8W	
R704	1-216-067-00	METAL CHIP	5.6K	5% 1/10W	
**********					
*	A-7063-511-A	RP-160 BOARD, COMPLETE (Ref.No 1,000 series)			
		**********			
	1-691-815-11	CABLE, FLAT			
*	3-947-318-01	LID (A), RP SHIELD CASE			
*	3-947-333-01	CASE (MAIN), SHIELD, RP			
		< CAPACITOR >			
C001	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C002	1-163-091-00	CERAMIC CHIP	8PF		50V
C003	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C004	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C005	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C006	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C007	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C008	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C009	1-163-091-00	CERAMIC CHIP	8PF		50V
C010	1-126-157-11	ELECT	10uF	20%	16V
C012	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C013	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C014	1-164-634-11	CERAMIC CHIP	1uF		16V
C015	1-126-157-11	ELECT	10uF	20%	16V
C016	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V
C017	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C018	1-124-638-11	ELECT	22uF	20%	10V
C019	1-163-038-00	CERAMIC CHIP	0.1uF		25V

Ref. No.	Part No.	Description			Remark
C021	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C022	1-163-224-11	CERAMIC CHIP	7PF	0.25PF	50V
C023	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C024	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C025	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C026	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C027	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C028	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C029	1-163-224-11	CERAMIC CHIP	7PF	0.25PF	50V
C030	1-126-154-11	ELECT	47uF	20%	6.3V
C032	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C033	1-164-634-11	CERAMIC CHIP	1uF		16V
C036	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V
C037	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C038	1-126-157-11	ELECT	10uF	20%	16V
C039	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C040	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C041	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C042	1-126-157-11	ELECT	10uF	20%	16V
C043	1-127-558-11	ELECT(SOLID)	10uF	20%	10V
C044	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C054	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C055	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C056	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C057	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C059	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C060	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C063	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C064	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C065	1-163-031-11	CERAMIC CHIP	0.01uF		50V
		< CONNECTOR >			
CN001	1-506-486-11	PIN, CONNECTOR 7P			
CN002	1-691-069-21	HOUSING, CONNECTOR 10P			
CN003	1-566-545-41	CONNECTOR, FPC (NON ZIF) 13P			
		< DIODE >			
D001	8-719-404-46	DIODE MA110			
D002	8-719-404-46	DIODE MA110			
		< IC >			
IC001	8-752-003-44	IC CX20034			
		< COIL >			
L001	1-408-948-00	INDUCTOR 220uH			
L002	1-408-973-21	INDUCTOR 18uH			
L003	1-407-169-XX	INDUCTOR 100uH			
L004	1-408-974-21	INDUCTOR 22uH			
L006	1-408-973-21	INDUCTOR 18uH			

Ref. No.	Part No.	Description			Remark
L009	1-408-970-21	INDUCTOR 10uH			
		< TRANSISTOR >			
Q001	8-729-102-07	TRANSISTOR	2SC2223-F13		
Q002	8-729-102-07	TRANSISTOR	2SC2223-F13		
Q003	8-729-421-19	TRANSISTOR	UN2213		
Q005	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q006	8-729-216-22	TRANSISTOR	2SA1162-G		
Q007	8-729-216-22	TRANSISTOR	2SA1162-G		
Q008	8-729-216-22	TRANSISTOR	2SA1162-G		
Q012	8-729-421-19	TRANSISTOR	UN2213		
Q016	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
		< RESISTOR >			
R001	1-216-079-00	METAL CHIP	18K	5%	1/10W
R002	1-216-077-00	METAL CHIP	15K	5%	1/10W
R003	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R004	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R005	1-216-089-00	METAL CHIP	47K	5%	1/10W
R006	1-216-089-00	METAL CHIP	47K	5%	1/10W
R007	1-216-081-00	METAL CHIP	22K	5%	1/10W
R008	1-216-073-00	METAL CHIP	10K	5%	1/10W
R009	1-216-001-00	METAL CHIP	10	5%	1/10W
R010	1-216-031-00	METAL CHIP	180	5%	1/10W
R011	1-216-075-00	METAL CHIP	12K	5%	1/10W
R012	1-216-081-00	METAL CHIP	22K	5%	1/10W
R013	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R014	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R015	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R016	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R017	1-216-081-00	METAL CHIP	22K	5%	1/10W
R018	1-216-073-00	METAL CHIP	10K	5%	1/10W
R019	1-216-001-00	METAL CHIP	10	5%	1/10W
R020	1-216-031-00	METAL CHIP	180	5%	1/10W
R021	1-216-089-00	METAL CHIP	47K	5%	1/10W
R022	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R023	1-216-089-00	METAL CHIP	47K	5%	1/10W
R024	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R025	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R026	1-216-685-11	METAL CHIP	27K	0.5%	1/10W
R028	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R029	1-216-073-00	METAL CHIP	10K	5%	1/10W
R031	1-216-073-00	METAL CHIP	10K	5%	1/10W
R034	1-216-295-00	METAL CHIP	0	5%	1/10W
R035	1-216-049-00	METAL CHIP	1K	5%	1/10W
R036	1-216-295-00	METAL CHIP	0	5%	1/10W
R040	1-216-081-00	METAL CHIP	22K	5%	1/10W
R041	1-216-085-00	METAL CHIP	33K	5%	1/10W
R042	1-216-035-00	METAL CHIP	270	5%	1/10W

Ref. No.	Part No.	Description			Remark
R043	1-216-033-00	METAL CHIP	220	5%	1/10W
R044	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R045	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R046	1-216-021-00	METAL CHIP	68	5%	1/10W
R047	1-216-017-00	METAL CHIP	47	5%	1/10W
R048	1-216-043-00	METAL CHIP	560	5%	1/10W
R057	1-216-025-00	METAL CHIP	100	5%	1/10W
R058	1-216-025-00	METAL CHIP	100	5%	1/10W
R060	1-216-295-00	METAL CHIP	0	5%	1/10W
R061	1-216-295-00	METAL CHIP	0	5%	1/10W
R062	1-216-025-00	METAL CHIP	100	5%	1/10W
R063	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R064	1-216-025-00	METAL CHIP	100	5%	1/10W
R067	1-216-295-00	METAL CHIP	0	5%	1/10W
R069	1-216-295-00	METAL CHIP	0	5%	1/10W
R070	1-216-295-00	METAL CHIP	0	5%	1/10W
R071	1-216-295-00	METAL CHIP	0	5%	1/10W
R072	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
		< VARIABLE RESISTOR >			
RV001	1-230-720-11	RES, ADJ, CARBON 4.7K			
RV002	1-230-720-11	RES, ADJ, CARBON 4.7K			

****

*	A-7063-514-A	ST-48 BOARD, COMPLETE (EV-S880E)			
*	A-7063-597-A	ST-48 BOARD, COMPLETE (EV-C770E) (Ref. No 3,000 series)			
		**********			
	1-691-819-11	CABLE, FLAT			
	1-751-029-11	CABLE, FLAT (FRS-11)			
	1-751-030-11	CABLE, FLAT (FRS-12)			
	3-831-441-XX	CUSHION (5)			
*	3-947-320-01	CASE (MAIN), SHIELD, ST			
*	3-947-321-01	LID, REAR, ST SHIELD CASE			
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3			
	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3			
		< CAPACITOR >			
C001	1-125-507-11	CAP, DOUBLE LAYERS 0.22F (EV-S880E)			
C002	1-124-471-00	ELECT	1000uF	20%	6.3V
C003	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C004	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C005	1-126-157-11	ELECT	10uF	20%	16V
C006	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C007	1-126-157-11	ELECT	10uF	20%	16V
C008	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C009	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C010	1-126-157-11	ELECT	10uF	20%	16V
C011	1-163-038-00	CERAMIC CHIP	0.1uF		25V

Ref. No.	Part No.	Description			Remark
C012	1-163-089-00	CERAMIC CHIP	6PF		50V
C013	1-163-245-11	CERAMIC CHIP	56PF	5%	50V
C014	1-163-098-00	CERAMIC CHIP	16PF	5%	50V
C015	1-163-098-00	CERAMIC CHIP	16PF	5%	50V
C016	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C017	1-124-907-11	ELECT	10uF	20%	50V
C018	1-124-907-11	ELECT	10uF	20%	50V
C020	1-126-162-11	ELECT	3.3uF	20%	50V
C021	1-124-471-00	ELECT	1000uF	20%	6.3V
C022	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C023	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C024	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C025	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C026	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C027	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C028	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C030	1-163-087-00	CERAMIC CHIP	4PF		50V
C032	1-126-157-11	ELECT	10uF	20%	16V
C034	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C035	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C036	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C037	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C038	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C039	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C040	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C041	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C042	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C043	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C044	1-164-634-11	CERAMIC CHIP	1uF		16V
C045	1-126-157-11	ELECT	10uF	20%	16V
C046	1-126-157-11	ELECT	10uF	20%	16V
C047	1-164-634-11	CERAMIC CHIP	1uF		16V
C048	1-126-157-11	ELECT	10uF	20%	16V
C050	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C051	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C052	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C053	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C054	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C055	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C056	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C057	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C058	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C059	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C060	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C064	1-124-472-11	ELECT	470uF	20%	10V
C065	1-124-257-00	ELECT	2.2uF	20%	50V
C066	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C074	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C076	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V

Ref. No.	Part No.	Description			Remark
C081	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C083	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C084	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C086	1-162-587-11	CERAMIC CHIP	0.039uF	10%	25V
C087	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C088	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C089	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C090	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C091	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C092	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C301	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C302	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C303	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C304	1-130-495-00	MYLAR	0.1uF	5%	50V
C305	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C306	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C307	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C308	1-126-163-11	ELECT	4.7uF	20%	50V
C309	1-164-330-21	CERAMIC CHIP	0.22uF	10%	16V
C310	1-164-330-21	CERAMIC CHIP	0.22uF	10%	16V
C311	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C312	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C313	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C315	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C316	1-126-301-11	ELECT	1uF	20%	50V
C317	1-127-530-11	ELECT(SOLID)	22uF	20%	20V
C318	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C322	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C323	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C324	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C327	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C328	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C329	1-126-157-11	ELECT	10uF	20%	16V
C330	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C331	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C332	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C333	1-127-530-11	ELECT(SOLID)	22uF	20%	20V
C334	1-127-530-11	ELECT(SOLID)	22uF	20%	20V
C340	1-127-491-00	ELECT(SOLID)	22uF	20%	10V
C405	1-124-443-00	ELECT	100uF	20%	10V
C407	1-124-443-00	ELECT	100uF	20%	10V
C420	1-126-157-11	ELECT	10uF	20%	16V
C427	1-126-157-11	ELECT	10uF	20%	16V
C428	1-126-157-11	ELECT	10uF	20%	16V
C429	1-126-157-11	ELECT	10uF	20%	16V
C430	1-126-157-11	ELECT	10uF	20%	16V
C431	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C432	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C434	1-126-301-11	ELECT	1uF	20%	50V

ST-48

Ref. No.	Part No.	Description		Remark	
C435	1-124-477-11	ELECT	47uF	20%	25V
C436	1-124-477-11	ELECT	47uF	20%	25V
C437	1-164-634-11	CERAMIC CHIP	1uF		16V
C438	1-164-634-11	CERAMIC CHIP	1uF		16V
C439	1-164-634-11	CERAMIC CHIP	1uF		16V
C440	1-164-634-11	CERAMIC CHIP	1uF		16V
C441	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C442	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C443	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C444	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C451	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C452	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C455	1-124-443-00	ELECT	100uF	20%	10V
C456	1-126-163-11	ELECT	4.7uF	20%	50V
C457	1-126-163-11	ELECT	4.7uF	20%	50V
C458	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C459	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C460	1-124-443-00	ELECT	100uF	20%	10V
C461	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C462	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C463	1-124-443-00	ELECT	100uF	20%	10V
C464	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C465	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C466	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C468	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C469	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C601	1-124-638-11	ELECT	22uF	20%	10V
C602	1-124-638-11	ELECT	22uF	20%	10V
C603	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C604	1-124-638-11	ELECT	22uF	20%	10V
C605	1-124-638-11	ELECT	22uF	20%	10V
C606	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C607	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C608	1-124-638-11	ELECT	22uF	20%	10V
C609	1-124-638-11	ELECT	22uF	20%	10V
C611	1-124-638-11	ELECT	22uF	20%	10V
C612	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C613	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C614	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C615	1-124-638-11	ELECT	22uF	20%	10V
C616	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C619	1-124-638-11	ELECT	22uF	20%	10V
C622	1-124-638-11	ELECT	22uF	20%	10V
C623	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C625	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C626	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C627	1-124-638-11	ELECT	22uF	20%	10V
C628	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C629	1-163-038-00	CERAMIC CHIP	0.1uF		25V

Ref. No.	Part No.	Description		Remark	
C630	1-124-638-11	ELECT	22uF	20%	10V
C631	1-126-157-11	ELECT	10uF	20%	16V
C632	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C633	1-126-157-11	ELECT	10uF	20%	16V
C634	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C635	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C636	1-124-638-11	ELECT	22uF	20%	10V
C637	1-124-638-11	ELECT	22uF	20%	10V
C638	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C639	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C640	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C641	1-124-638-11	ELECT	22uF	20%	10V
C644	1-124-638-11	ELECT	22uF	20%	10V
C649	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C650	1-126-176-11	ELECT	220uF	20%	10V
C651	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C652	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C653	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C654	1-126-176-11	ELECT	220uF	20%	10V
C656	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C657	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C658	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C659	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C660	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C661	1-124-638-11	ELECT	22uF	20%	10V
C662	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C663	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C664	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C666	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C672	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C673	1-126-157-11	ELECT	10uF	20%	16V
C674	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C675	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C677	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C702	1-124-443-00	ELECT	100uF	20%	10V
C703	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C704	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C705	1-124-638-11	ELECT	22uF	20%	10V
C706	1-124-638-11	ELECT	22uF	20%	10V
C707	1-124-638-11	ELECT	22uF	20%	10V
C710	1-124-443-00	ELECT	100uF	20%	10V
C711	1-124-638-11	ELECT	22uF	20%	10V
C712	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C713	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C714	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C715	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C716	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C717	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C718	1-163-031-11	CERAMIC CHIP	0.01uF		50V

Ref. No.	Part No.	Description			Remark
C724	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C725	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C727	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C728	1-124-638-11	ELECT	22uF	20%	10V
C729	1-124-638-11	ELECT	22uF	20%	10V
C730	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C732	1-124-638-11	ELECT	22uF	20%	10V
C733	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C734	1-124-638-11	ELECT	22uF	20%	10V
C735	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C736	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C737	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C738	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C739	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C740	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C745	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C746	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C747	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C748	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C749	1-124-638-11	ELECT	22uF	20%	10V
C750	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C751	1-124-638-11	ELECT	22uF	20%	10V
C752	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C753	1-124-443-00	ELECT	100uF	20%	10V
C754	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C755	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C756	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C760	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C764	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C765	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C766	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C770	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C772	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C773	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C774	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C777	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C778	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C780	1-126-301-11	ELECT	1uF	20%	50V
C781	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C782	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C783	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C784	1-126-301-11	ELECT	1uF	20%	50V
C786	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C787	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C788	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C789	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C790	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C791	1-126-157-11	ELECT	10uF	20%	16V
C792	1-164-232-11	CERAMIC CHIP	0.01uF		50V

Ref. No.	Part No.	Description			Remark
C793	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C795	1-124-443-00	ELECT	100uF	20%	10V
C796	1-124-287-00	ELECT	10uF	20%	10V
C797	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C798	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C799	1-124-443-00	ELECT	100uF	20%	10V
C800	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C801	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C802	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C803	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C804	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C805	1-126-157-11	ELECT	10uF	20%	16V
C806	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C807	1-163-106-00	CERAMIC CHIP	36PF	5%	50V
C808	1-163-224-11	CERAMIC CHIP	7PF	0.25PF	50V
C809	1-126-162-11	ELECT	3.3uF	20%	50V
C810	1-130-483-00	MYLAR	0.01uF	5%	50V
C812	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C813	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C814	1-124-477-11	ELECT	47uF	20%	25V
C815	1-126-301-11	ELECT	1uF	20%	50V
C816	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C817	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C818	1-124-443-00	ELECT	100uF	20%	10V
C819	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C821	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C823	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C826	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C827	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C830	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C831	1-163-114-00	CERAMIC CHIP	75PF	5%	50V
C832	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C833	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C834	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C835	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C840	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C841	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C842	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C843	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C844	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C845	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C846	1-124-638-11	ELECT	22uF	20%	10V
C847	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C848	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C850	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C853	1-124-638-11	ELECT	22uF	20%	10V
C854	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C855	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C858	1-163-031-11	CERAMIC CHIP	0.01uF		50V

Ref. No.	Part No.	Description			Remark
C859	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C860	1-127-491-00	ELECT(SOLID)	22uF	20%	10V
C861	1-124-638-11	ELECT	22uF	20%	10V
C862	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C863	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C864	1-163-114-00	CERAMIC CHIP	75PF	5%	50V
C869	1-124-443-00	ELECT	100uF	20%	10V
C870	1-124-443-00	ELECT	100uF	20%	10V
C871	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C872	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C873	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C877	1-124-638-11	ELECT	22uF	20%	10V
C900	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C903	1-126-157-11	ELECT	10uF	20%	16V
C904	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C905	1-124-443-00	ELECT	100uF	20%	10V
C906	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C907	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C908	1-126-301-11	ELECT	1uF	20%	50V
C909	1-124-638-11	ELECT	22uF	20%	10V
C911	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C912	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C913	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C915	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C916	1-163-098-00	CERAMIC CHIP	16PF	5%	50V
C917	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C918	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C919	1-126-162-11	ELECT	3.3uF	20%	50V
C920	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C921	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C922	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C923	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C924	1-126-301-11	ELECT	1uF	20%	50V
C925	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C926	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V
C927	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C928	1-127-491-00	ELECT(SOLID)	22uF	20%	10V
C932	1-163-099-00	CERAMIC CHIP	18PF	5%	50V (EV-S880E)
C933	1-124-638-11	ELECT	22uF	20%	10V (EV-S880E)
C934	1-124-257-00	ELECT	2.2uF	20%	50V
C935	1-124-638-11	ELECT	22uF	20%	10V
C936	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C937	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C938	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C939	1-124-443-00	ELECT	100uF	20%	10V
C940	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C941	1-124-638-11	ELECT	22uF	20%	10V
C942	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C943	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C944	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C945	1-124-638-11	ELECT	22uF	20%	10V
C946	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C947	1-124-638-11	ELECT	22uF	20%	10V
C949	1-124-638-11	ELECT	22uF	20%	10V
C950	1-124-638-11	ELECT	22uF	20%	10V
C951	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C952	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C953	1-124-638-11	ELECT	22uF	20%	10V
C954	1-124-638-11	ELECT	22uF	20%	10V
C955	1-124-638-11	ELECT	22uF	20%	10V
C956	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C957	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C958	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C960	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C961	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C962	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C963	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C964	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C965	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C966	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C972	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C973	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C974	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C975	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C976	1-126-157-11	ELECT	10uF	20%	16V
C978	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C979	1-163-251-11	CERAMIC CHIP	100PF	5%	50V

< FILTER >

CF001	1-567-132-00	OSCILLATOR, CERAMIC (8.00MHz)

< CONNECTOR >

CN001	1-580-240-11	SOCKET, CONNECTOR 22P
CN002	1-580-240-11	SOCKET, CONNECTOR 22P
CN003	1-565-510-11	SOCKET, CONNECTOR 16P
CN006	1-563-605-11	CONNECTOR, FLEXIBLE 28P (EV-S880E)
CN010	1-563-607-11	CONNECTOR, FLEXIBLE 30P
CN011	1-563-607-11	CONNECTOR, FLEXIBLE 30P
CN012	1-569-264-11	CONNECTOR, FPC (ZIF TYPE) 8P
CN013	1-565-073-11	SOCKET, CONNECTOR 16P
CN301	1-691-041-21	HOUSING, CONNECTOR 9P
CN302	1-563-591-11	CONNECTOR, FLEXIBLE 14P
CN601	1-563-588-11	CONNECTOR, FLEXIBLE 11P
CN801	1-563-598-11	CONNECTOR, FLEXIBLE 21P

Ref. No.	Part No.	Description	Remark
		< TRIMMER >	
CT001	1-141-311-11	CAP, TRIMMER 20PF	
CT701	1-141-227-00	CAP, TRIMMER 20PF	
CT702	1-141-227-00	CAP, TRIMMER 20PF	
CT703	1-141-227-00	CAP, TRIMMER 20PF	
CT704	1-141-227-00	CAP, TRIMMER 20PF	
CT901	1-141-227-00	CAP, TRIMMER 20PF	
		< DIODE >	
D001	8-719-200-36	DIODE E10QS04	
D002	8-719-200-27	DIODE E10DS2	
D003	8-719-200-36	DIODE E10QS04	
D004	8-719-400-18	DIODE MA152WK	
D006	8-719-400-18	DIODE MA152WK	
D008	8-719-106-23	DIODE RD7.5M-B2	
D010	8-719-200-27	DIODE E10DS2	
D012	8-719-400-18	DIODE MA152WK	
D015	8-719-200-27	DIODE E10DS2	
D017	8-719-400-18	DIODE MA152WK	
D019	8-719-400-18	DIODE MA152WK (EV-S880E)	
D020	8-719-400-18	DIODE MA152WK	
D301	8-719-200-27	DIODE E10DS2	
D401	8-719-800-76	DIODE 1SS226	
D402	8-719-800-76	DIODE 1SS226	
D403	8-719-400-18	DIODE MA152WK	
D404	8-719-400-18	DIODE MA152WK	
D607	8-719-400-18	DIODE MA152WK	
D608	8-719-400-18	DIODE MA152WK	
D609	8-719-801-41	DIODE 1SS196	
D703	8-713-300-88	DIODE 1T33C-01	
D704	8-713-300-88	DIODE 1T33C-01	
D709	8-719-801-41	DIODE 1SS196	
D901	8-719-400-18	DIODE MA152WK	
D902	8-719-200-36	DIODE E10QS04	
D903	8-719-200-36	DIODE E10QS04	
D904	8-719-200-36	DIODE E10QS04	
		< FUSE >	
⚠F001	1-576-207-11	FUSE	
		< FERRITE BEAD >	
FB001	1-412-390-21	INDUCTOR CHIP 0uH	
FB002	1-412-390-21	INDUCTOR CHIP 0uH	
FB005	1-412-390-21	INDUCTOR CHIP 0uH	
FB006	1-412-390-21	INDUCTOR CHIP 0uH	
FB601	1-412-390-21	INDUCTOR CHIP 0uH	
FB602	1-412-390-21	INDUCTOR CHIP 0uH	
FB603	1-412-390-21	INDUCTOR CHIP 0uH	
FB701	1-543-256-11	BEAD, FERRITE	
FB702	1-543-256-11	BEAD, FERRITE	
FB704	1-412-390-21	INDUCTOR CHIP 0uH	
		< FILTER >	
FL601	1-236-773-21	FILTER, LOW PASS (Y)	
FL602	1-236-773-21	FILTER, LOW PASS (Y)	
FL603	1-236-773-21	FILTER, LOW PASS (Y)	
		< IC >	
IC001	8-759-090-24	IC MB89794B-187	
IC002	8-752-839-57	IC CXP80624-457Q	
IC003	8-759-070-96	IC CXA1481AQ	
IC004	8-759-937-56	IC S-8054ALB-LM-S	
IC005	8-759-941-78	IC S-8053ALB	
IC006	8-759-990-07	IC TL1596CNS	
IC007	8-759-720-45	IC CAT35C202K	
IC010	8-759-513-72	IC PQ12RF11	
IC011	8-759-513-73	IC PQ09RF11	
IC301	8-759-983-69	IC LM358PS	
IC302	8-759-823-94	IC LB1836M	
IC304	8-759-990-55	IC CXA8006M	
IC305	8-759-148-05	IC CXA8010M	
IC405	8-759-700-43	IC NJM4558M	
IC406	8-759-009-06	IC MC14052BF	
IC407	8-759-700-43	IC NJM4558M	
IC408	8-759-700-43	IC NJM4558M	
IC601	8-752-052-58	IC CXA1410M	
IC603	8-759-093-42	IC MC141625FU	
IC605	8-759-069-28	IC PQ05RF11	
IC701	8-759-710-07	IC NJM2234M	
IC702	8-759-710-07	IC NJM2234M	
IC704	8-752-334-49	IC CXD1172AM	
IC705	8-752-334-49	IC CXD1172AM	
IC706	8-759-514-85	IC CF45000PJ	
IC707	8-759-514-86	IC CF45001PJ	
IC708	8-759-243-19	IC TC7SU04F	
IC709	8-752-340-75	IC CXK1206AM	
IC710	8-759-300-71	IC HD14053BFP	
IC711	8-759-300-71	IC HD14053BFP	
IC901	8-759-056-34	IC M50555-054FP	
IC902	8-759-631-10	IC M52684AFP	
IC903	8-759-710-29	IC NJM2235M	
IC904	8-759-710-86	IC NJM2233BM	
IC905	8-759-300-71	IC HD14053BFP	
IC906	8-759-057-40	IC MC14577BF	
IC907	8-759-057-40	IC MC14577BF	
IC908	8-759-057-40	IC MC14577BF	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

ST-48

Ref. No.	Part No.	Description			Remark
IC909	8-759-979-68	IC LM2931Z-5.0			
		< JUMPER RESISTOR >			
JR004	1-216-295-00	METAL CHIP	0	5% 1/10W	
JR303	1-216-295-00	METAL CHIP	0	5% 1/10W	
		< COIL >			
L001	1-407-169-XX	INDUCTOR 100uH			
L002	1-407-169-XX	INDUCTOR 100uH			
L003	1-407-169-XX	INDUCTOR 100uH			
L005	1-410-389-31	INDUCTOR CHIP 47uH			
L008	1-410-389-31	INDUCTOR CHIP 47uH			
L009	1-408-970-21	INDUCTOR 10uH			
L013	1-414-170-11	INDUCTOR CHIP 100uH			
L301	1-424-104-11	COIL, CHOKE 10uH			
L302	1-424-104-11	COIL, CHOKE 10uH			
L401	1-408-978-21	INDUCTOR 47uH			
L402	1-408-978-21	INDUCTOR 47uH			
L405	1-408-970-21	INDUCTOR 10uH			
L603	1-408-970-21	INDUCTOR 10uH			
L604	1-408-970-21	INDUCTOR 10uH			
L605	1-408-970-21	INDUCTOR 10uH			
L610	1-408-970-21	INDUCTOR 10uH			
L702	1-408-970-21	INDUCTOR 10uH			
L704	1-408-970-21	INDUCTOR 10uH			
L707	1-408-981-21	INDUCTOR 82uH			
L708	1-408-981-21	INDUCTOR 82uH			
L710	1-408-970-21	INDUCTOR 10uH			
L711	1-408-984-21	INDUCTOR 150uH			
L712	1-408-980-21	INDUCTOR 68uH			
L713	1-408-973-21	INDUCTOR 18uH			
L715	1-408-970-21	INDUCTOR 10uH			
L721	1-408-978-21	INDUCTOR 47uH			
L722	1-408-966-21	INDUCTOR 4.7uH			
L723	1-408-966-21	INDUCTOR 4.7uH			
L725	1-408-980-21	INDUCTOR 68uH			
L726	1-408-973-21	INDUCTOR 18uH			
L728	1-408-981-21	INDUCTOR 82uH			
L729	1-408-981-21	INDUCTOR 82uH			
L731	1-408-978-21	INDUCTOR 47uH			
L733	1-408-970-21	INDUCTOR 10uH			
L735	1-407-169-XX	INDUCTOR 100uH			
L901	1-408-974-21	INDUCTOR 22uH			
L902	1-408-975-21	INDUCTOR 27uH			
L903	1-408-975-21	INDUCTOR 27uH			
L907	1-408-970-21	INDUCTOR 10uH			
L908	1-408-978-21	INDUCTOR 47uH			
L909	1-408-970-21	INDUCTOR 10uH			

Ref. No.	Part No.	Description	Remark
L910	1-408-970-21	INDUCTOR 10uH	
		< CLAMP >	
* LP001	3-683-631-01	CLAMP	
* LP002	3-683-631-01	CLAMP	
		< IC LINK >	
⚠PS301	1-532-605-00	LINK, IC 0.4A	
		< TRANSISTOR >	
Q002	8-729-421-19	TRANSISTOR UN2213	
Q003	8-729-140-98	TRANSISTOR 2SD773-34	
Q005	8-729-420-20	TRANSISTOR XN4312	
Q006	8-729-403-24	TRANSISTOR XN4210	
Q007	8-729-424-76	TRANSISTOR UN2210	
Q008	8-729-424-18	TRANSISTOR UN2113	
Q009	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q010	8-729-421-19	TRANSISTOR UN2213	
Q011	8-729-402-19	TRANSISTOR XN6501	
Q012	8-729-420-20	TRANSISTOR XN4312	
Q016	8-729-421-19	TRANSISTOR UN2213	
Q018	8-729-421-19	TRANSISTOR UN2213	
Q019	8-729-216-22	TRANSISTOR 2SA1162-G	
Q020	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q021	8-729-424-08	TRANSISTOR UN2111	
Q304	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R	
Q305	8-729-421-19	TRANSISTOR UN2213	
Q306	8-729-420-12	TRANSISTOR XN4213	
Q307	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q308	8-729-424-18	TRANSISTOR UN2113	
Q309	8-729-231-60	TRANSISTOR 2SD1406-YGR	
Q310	8-729-231-60	TRANSISTOR 2SD1406-YGR	
Q312	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R	
Q403	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q404	8-729-922-87	TRANSISTOR 2SD1757K-RS	
Q407	8-729-216-22	TRANSISTOR 2SA1162-G	
Q408	8-729-922-87	TRANSISTOR 2SD1757K-RS	
Q409	8-729-922-87	TRANSISTOR 2SD1757K-RS	
Q410	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q411	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q412	8-729-421-90	TRANSISTOR XN4113	
Q413	8-729-903-30	TRANSISTOR DTC144TK	
Q414	8-729-903-30	TRANSISTOR DTC144TK	
Q415	8-729-420-20	TRANSISTOR XN4312	
Q416	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q417	8-729-421-19	TRANSISTOR UN2213	
Q418	8-729-421-19	TRANSISTOR UN2213	
Q419	8-729-424-08	TRANSISTOR UN2111	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description		Remark
Q420	8-729-421-19	TRANSISTOR	UN2213	
Q600	8-729-402-19	TRANSISTOR	XN6501	
Q601	8-729-216-22	TRANSISTOR	2SA1162-G	
Q602	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q603	8-729-402-84	TRANSISTOR	XN4601	
Q604	8-729-421-19	TRANSISTOR	UN2213	
Q609	8-729-216-22	TRANSISTOR	2SA1162-G	
Q610	8-729-216-22	TRANSISTOR	2SA1162-G	
Q611	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q612	8-729-402-19	TRANSISTOR	XN6501	
Q616	8-729-216-22	TRANSISTOR	2SA1162-G	
Q617	8-729-216-22	TRANSISTOR	2SA1162-G	
Q618	8-729-421-19	TRANSISTOR	UN2213	
Q620	8-729-421-19	TRANSISTOR	UN2213	
Q701	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q702	8-729-402-19	TRANSISTOR	XN6501	
Q703	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q704	8-729-402-19	TRANSISTOR	XN6501	
Q705	8-729-402-19	TRANSISTOR	XN6501	
Q706	8-729-216-22	TRANSISTOR	2SA1162-G	
Q707	8-729-216-22	TRANSISTOR	2SA1162-G	
Q708	8-729-402-19	TRANSISTOR	XN6501	
Q709	8-729-216-22	TRANSISTOR	2SA1162-G	
Q710	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q711	8-729-402-19	TRANSISTOR	XN6501	
Q713	8-729-402-19	TRANSISTOR	XN6501	
Q714	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q715	8-729-216-22	TRANSISTOR	2SA1162-G	
Q722	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q723	8-729-216-22	TRANSISTOR	2SA1162-G	
Q724	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q726	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q727	8-729-216-22	TRANSISTOR	2SA1162-G	
Q728	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q729	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q730	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q731	8-729-424-08	TRANSISTOR	UN2111	
Q732	8-729-402-19	TRANSISTOR	XN6501	
Q733	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q734	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q735	8-729-216-22	TRANSISTOR	2SA1162-G	
Q736	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q737	8-729-421-19	TRANSISTOR	UN2213	
Q738	8-729-402-19	TRANSISTOR	XN6501	
Q739	8-729-402-84	TRANSISTOR	XN4601	
Q740	8-729-402-84	TRANSISTOR	XN4601	
Q741	8-729-402-84	TRANSISTOR	XN4601	
Q742	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q743	8-729-202-38	TRANSISTOR	2SC3326N	
Q749	8-729-216-22	TRANSISTOR	2SA1162-G	
Q752	8-729-902-99	TRANSISTOR	DTC114TK	
Q753	8-729-216-22	TRANSISTOR	2SA1162-G	
Q755	8-729-421-19	TRANSISTOR	UN2213	
Q756	8-729-421-22	TRANSISTOR	UN2211	
Q757	8-729-403-24	TRANSISTOR	XN4210	
Q901	8-729-216-22	TRANSISTOR	2SA1162-G	
Q902	8-729-216-22	TRANSISTOR	2SA1162-G	
Q906	8-729-402-84	TRANSISTOR	XN4601	
Q907	8-729-402-84	TRANSISTOR	XN4601	
Q908	8-729-216-22	TRANSISTOR	2SA1162-G	
Q911	8-729-120-28	TRANSISTOR	2SC1623-L5L6	(EV-S880E)
Q914	8-729-216-22	TRANSISTOR	2SA1162-G	
Q915	8-729-402-84	TRANSISTOR	XN4601	
Q916	8-729-216-22	TRANSISTOR	2SA1162-G	
Q917	8-729-402-84	TRANSISTOR	XN4601	
Q918	8-729-402-84	TRANSISTOR	XN4601	
Q930	8-729-216-22	TRANSISTOR	2SA1162-G	
Q931	8-729-120-28	TRANSISTOR	2SC1623-L5L6	

< RESISTOR >

R001	1-216-073-00	METAL CHIP	10K	5%	1/10W
R002	1-216-073-00	METAL CHIP	10K	5%	1/10W
R003	1-216-073-00	METAL CHIP	10K	5%	1/10W
R004	1-216-073-00	METAL CHIP	10K	5%	1/10W
R005	1-216-073-00	METAL CHIP	10K	5%	1/10W
R007	1-216-295-00	METAL CHIP	0	5%	1/10W (EV-C770E)
R008	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R009	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R011	1-216-017-00	METAL CHIP	47	5%	1/10W
R012	1-216-115-00	METAL CHIP	560K	5%	1/10W
R013	1-216-073-00	METAL CHIP	10K	5%	1/10W
R014	1-216-661-11	METAL CHIP	2.7K	0.5%	1/10W
R015	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R016	1-216-073-00	METAL CHIP	10K	5%	1/10W
R017	1-216-033-00	METAL CHIP	220	5%	1/10W
R018	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R020	1-216-295-00	METAL CHIP	0	5%	1/10W
R024	1-216-089-00	METAL CHIP	47K	5%	1/10W
R025	1-216-089-00	METAL CHIP	47K	5%	1/10W
R026	1-216-089-00	METAL CHIP	47K	5%	1/10W
R027	1-216-089-00	METAL CHIP	47K	5%	1/10W
R028	1-216-073-00	METAL CHIP	10K	5%	1/10W
R030	1-216-097-00	METAL CHIP	100K	5%	1/10W
R032	1-216-097-00	METAL CHIP	100K	5%	1/10W
R033	1-216-097-00	METAL CHIP	100K	5%	1/10W
R035	1-216-089-00	METAL CHIP	47K	5%	1/10W
R037	1-216-295-00	METAL CHIP	0	5%	1/10W

Ref. No.	Part No.	Description			Remark
R040	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R041	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R042	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R043	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R045	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R046	1-216-089-00	METAL CHIP	47K	5%	1/10W
R047	1-216-089-00	METAL CHIP	47K	5%	1/10W
R048	1-216-089-00	METAL CHIP	47K	5%	1/10W
R049	1-216-089-00	METAL CHIP	47K	5%	1/10W
R050	1-216-089-00	METAL CHIP	47K	5%	1/10W
R051	1-216-089-00	METAL CHIP	47K	5%	1/10W
R052	1-216-089-00	METAL CHIP	47K	5%	1/10W
R053	1-216-089-00	METAL CHIP	47K	5%	1/10W
R054	1-216-089-00	METAL CHIP	47K	5%	1/10W
R055	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R058	1-216-089-00	METAL CHIP	47K	5%	1/10W
R059	1-216-295-00	METAL CHIP	0	5%	1/10W (EV-C770E)
R061	1-216-097-00	METAL CHIP	100K	5%	1/10W
R062	1-216-049-00	METAL CHIP	1K	5%	1/10W
R063	1-216-049-00	METAL CHIP	1K	5%	1/10W
R064	1-216-099-00	METAL CHIP	120K	5%	1/10W
R065	1-216-099-00	METAL CHIP	120K	5%	1/10W
R066	1-216-172-00	METAL CHIP	82	5%	1/8W
R068	1-216-295-00	METAL CHIP	0	5%	1/10W
R069	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R070	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R071	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R072	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R074	1-216-073-00	METAL CHIP	10K	5%	1/10W
R075	1-216-295-00	METAL CHIP	0	5%	1/10W
R076	1-216-041-00	METAL CHIP	470	5%	1/10W
R077	1-216-041-00	METAL CHIP	470	5%	1/10W
R078	1-216-081-00	METAL CHIP	22K	5%	1/10W
R079	1-216-095-00	METAL CHIP	82K	5%	1/10W
R080	1-216-073-00	METAL CHIP	10K	5%	1/10W
R081	1-216-679-11	METAL CHIP	15K	0.5%	1/10W
R082	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R083	1-216-097-00	METAL CHIP	100K	5%	1/10W
R084	1-216-089-00	METAL CHIP	47K	5%	1/10W
R085	1-216-074-00	METAL CHIP	11K	5%	1/10W
R086	1-216-105-00	METAL CHIP	220K	5%	1/10W
R087	1-809-364-21	THERMISTOR, NTC (2125)			
R088	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R089	1-216-079-00	METAL CHIP	18K	5%	1/10W
R090	1-216-073-00	METAL CHIP	10K	5%	1/10W
R091	1-216-045-00	METAL CHIP	680	5%	1/10W
R093	1-216-081-00	METAL CHIP	22K	5%	1/10W
R095	1-216-295-00	METAL CHIP	0	5%	1/10W

Ref. No.	Part No.	Description			Remark
R097	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R098	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R099	1-216-295-00	METAL CHIP	0	5%	1/10W
R100	1-216-113-00	METAL CHIP	470K	5%	1/10W
R101	1-216-073-00	METAL CHIP	10K	5%	1/10W
R102	1-216-073-00	METAL CHIP	10K	5%	1/10W
R103	1-216-097-00	METAL CHIP	100K	5%	1/10W
R104	1-216-097-00	METAL CHIP	100K	5%	1/10W
R105	1-216-097-00	METAL CHIP	100K	5%	1/10W
R106	1-216-097-00	METAL CHIP	100K	5%	1/10W
R107	1-216-097-00	METAL CHIP	100K	5%	1/10W
R108	1-216-097-00	METAL CHIP	100K	5%	1/10W
R109	1-216-097-00	METAL CHIP	100K	5%	1/10W
R110	1-216-089-00	METAL CHIP	47K	5%	1/10W
R111	1-216-089-00	METAL CHIP	47K	5%	1/10W
R112	1-216-089-00	METAL CHIP	47K	5%	1/10W
R113	1-216-089-00	METAL CHIP	47K	5%	1/10W
R114	1-216-073-00	METAL CHIP	10K	5%	1/10W
R115	1-216-089-00	METAL CHIP	47K	5%	1/10W
R116	1-216-089-00	METAL CHIP	47K	5%	1/10W
R118	1-216-049-00	METAL CHIP	1K	5%	1/10W
R119	1-216-049-00	METAL CHIP	1K	5%	1/10W
R120	1-216-049-00	METAL CHIP	1K	5%	1/10W
R121	1-216-049-00	METAL CHIP	1K	5%	1/10W
R122	1-216-049-00	METAL CHIP	1K	5%	1/10W
R123	1-216-049-00	METAL CHIP	1K	5%	1/10W
R124	1-216-049-00	METAL CHIP	1K	5%	1/10W
R131	1-216-295-00	METAL CHIP	0	5%	1/10W
R132	1-216-109-00	METAL CHIP	330K	5%	1/10W
R133	1-216-697-11	METAL CHIP	82K	0.5%	1/10W
R134	1-216-049-00	METAL CHIP	1K	5%	1/10W
R135	1-216-085-00	METAL CHIP	33K	5%	1/10W
R138	1-216-089-00	METAL CHIP	47K	5%	1/10W
R139	1-216-089-00	METAL CHIP	47K	5%	1/10W
R140	1-216-295-00	METAL CHIP	0	5%	1/10W
R141	1-216-295-00	METAL CHIP	0	5%	1/10W
R142	1-216-295-00	METAL CHIP	0	5%	1/10W
R143	1-216-049-00	METAL CHIP	1K	5%	1/10W
R147	1-216-295-00	METAL CHIP	0	5%	1/10W
R148	1-216-001-00	METAL CHIP	10	5%	1/10W
R149	1-216-001-00	METAL CHIP	10	5%	1/10W
R151	1-216-658-11	METAL CHIP	2K	0.5%	1/10W
R152	1-216-049-00	METAL CHIP	1K	5%	1/10W
R153	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R154	1-216-121-00	METAL CHIP	1M	5%	1/10W
R155	1-216-073-00	METAL CHIP	10K	5%	1/10W
R156	1-216-073-00	METAL CHIP	10K	5%	1/10W
R157	1-216-089-00	METAL CHIP	47K	5%	1/10W
R158	1-216-097-00	METAL CHIP	100K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R159	1-216-101-00	METAL CHIP	150K	5%	1/10W
R160	1-216-025-00	METAL CHIP	100	5%	1/10W
R161	1-216-037-00	METAL CHIP	330	5%	1/10W
R163	1-216-049-00	METAL CHIP	1K	5%	1/10W
R164	1-216-049-00	METAL CHIP	1K	5%	1/10W
R165	1-216-049-00	METAL CHIP	1K	5%	1/10W
R166	1-216-049-00	METAL CHIP	1K	5%	1/10W
R167	1-216-049-00	METAL CHIP	1K	5%	1/10W
R168	1-216-049-00	METAL CHIP	1K	5%	1/10W
R169	1-216-049-00	METAL CHIP	1K	5%	1/10W
R170	1-216-049-00	METAL CHIP	1K	5%	1/10W
R171	1-216-049-00	METAL CHIP	1K	5%	1/10W
R172	1-216-049-00	METAL CHIP	1K	5%	1/10W
R173	1-216-049-00	METAL CHIP	1K	5%	1/10W
R174	1-216-049-00	METAL CHIP	1K	5%	1/10W
R175	1-216-295-00	METAL CHIP	0	5%	1/10W
R176	1-216-049-00	METAL CHIP	1K	5%	1/10W
R177	1-216-049-00	METAL CHIP	1K	5%	1/10W
R178	1-216-049-00	METAL CHIP	1K	5%	1/10W
R179	1-216-049-00	METAL CHIP	1K	5%	1/10W
R180	1-216-049-00	METAL CHIP	1K	5%	1/10W
R181	1-216-049-00	METAL CHIP	1K	5%	1/10W
R182	1-216-049-00	METAL CHIP	1K	5%	1/10W
R183	1-216-049-00	METAL CHIP	1K	5%	1/10W
R184	1-216-049-00	METAL CHIP	1K	5%	1/10W
R185	1-216-049-00	METAL CHIP	1K	5%	1/10W
R186	1-216-049-00	METAL CHIP	1K	5%	1/10W
R187	1-216-049-00	METAL CHIP	1K	5%	1/10W
R188	1-216-049-00	METAL CHIP	1K	5%	1/10W
R189	1-216-049-00	METAL CHIP	1K	5%	1/10W
R190	1-216-049-00	METAL CHIP	1K	5%	1/10W
R191	1-216-049-00	METAL CHIP	1K	5%	1/10W
R192	1-216-049-00	METAL CHIP	1K	5%	1/10W
R193	1-216-049-00	METAL CHIP	1K	5%	1/10W
R194	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R195	1-216-049-00	METAL CHIP	1K	5%	1/10W
R196	1-216-017-00	METAL CHIP	47	5%	1/10W
R197	1-216-049-00	METAL CHIP	1K	5%	1/10W
R198	1-216-049-00	METAL CHIP	1K	5%	1/10W
R199	1-216-049-00	METAL CHIP	1K	5%	1/10W
R200	1-216-049-00	METAL CHIP	1K	5%	1/10W
R206	1-216-295-00	METAL CHIP	0	5%	1/10W
R207	1-216-295-00	METAL CHIP	0	5%	1/10W
R208	1-216-049-00	METAL CHIP	1K	5%	1/10W
R210	1-216-073-00	METAL CHIP	10K	5%	1/10W
R212	1-216-073-00	METAL CHIP	10K	5%	1/10W
R214	1-216-073-00	METAL CHIP	10K	5%	1/10W
R215	1-216-025-00	METAL CHIP	100	5%	1/10W
R217	1-216-049-00	METAL CHIP	1K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R218	1-216-049-00	METAL CHIP	1K	5%	1/10W
R219	1-216-049-00	METAL CHIP	1K	5%	1/10W
R220	1-216-049-00	METAL CHIP	1K	5%	1/10W
R221	1-216-041-00	METAL CHIP	470	5%	1/10W
R222	1-216-121-00	METAL CHIP	1M	5%	1/10W
R223	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R224	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R225	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R226	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R227	1-216-049-00	METAL CHIP	1K	5%	1/10W
R228	1-216-081-00	METAL CHIP	22K	5%	1/10W
R229	1-216-081-00	METAL CHIP	22K	5%	1/10W
R231	1-216-025-00	METAL CHIP	100	5%	1/10W
R233	1-216-041-00	METAL CHIP	470	5%	1/10W
R234	1-216-039-00	METAL CHIP	390	5%	1/10W
R235	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R236	1-216-049-00	METAL CHIP	1K	5%	1/10W
R237	1-216-049-00	METAL CHIP	1K	5%	1/10W
R238	1-216-049-00	METAL CHIP	1K	5%	1/10W
R239	1-216-295-00	METAL CHIP	0	5%	1/10W
R240	1-216-029-00	METAL CHIP	150	5%	1/10W
R249	1-216-295-00	METAL CHIP	0	5%	1/10W
R250	1-216-295-00	METAL CHIP	0	5%	1/10W
R253	1-216-073-00	METAL CHIP	10K	5%	1/10W
R254	1-216-073-00	METAL CHIP	10K	5%	1/10W
R255	1-216-073-00	METAL CHIP	10K	5%	1/10W
R258	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R259	1-216-049-00	METAL CHIP	1K	5%	1/10W
R260	1-216-089-00	METAL CHIP	47K	5%	1/10W
R261	1-216-081-00	METAL CHIP	22K	5%	1/10W
R262	1-216-295-00	METAL CHIP	0	5%	1/10W
R264	1-216-049-00	METAL CHIP	1K	5%	1/10W
R268	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R271	1-216-037-00	METAL CHIP	330	5%	1/10W
R272	1-216-037-00	METAL CHIP	330	5%	1/10W
R273	1-216-037-00	METAL CHIP	330	5%	1/10W
R274	1-216-037-00	METAL CHIP	330	5%	1/10W
R275	1-216-037-00	METAL CHIP	330	5%	1/10W
R276	1-216-037-00	METAL CHIP	330	5%	1/10W
R277	1-216-037-00	METAL CHIP	330	5%	1/10W
R278	1-216-037-00	METAL CHIP	330	5%	1/10W
R279	1-216-037-00	METAL CHIP	330	5%	1/10W
R280	1-216-037-00	METAL CHIP	330	5%	1/10W
R281	1-216-037-00	METAL CHIP	330	5%	1/10W
R282	1-216-037-00	METAL CHIP	330	5%	1/10W
R283	1-216-295-00	METAL CHIP	0	5%	1/10W
R284	1-216-121-00	METAL CHIP	1M	5%	1/10W
R290	1-216-073-00	METAL CHIP	10K	5%	1/10W
R293	1-216-073-00	METAL CHIP	10K	5%	1/10W

ST-48

Ref. No.	Part No.	Description			Remark
R295	1-216-073-00	METAL CHIP	10K	5%	1/10W
R296	1-216-049-00	METAL CHIP	1K	5%	1/10W
R297	1-216-049-00	METAL CHIP	1K	5%	1/10W
R298	1-216-049-00	METAL CHIP	1K	5%	1/10W
R299	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R300	1-216-295-00	METAL CHIP	0	5%	1/10W
R301	1-216-295-00	METAL CHIP	0	5%	1/10W
R302	1-809-789-71	THERMISTOR, POSITIVE			
R304	1-216-049-00	METAL CHIP	1K	5%	1/10W
R305	1-216-049-00	METAL CHIP	1K	5%	1/10W
R306	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R307	1-216-049-00	METAL CHIP	1K	5%	1/10W
R308	1-216-073-00	METAL CHIP	10K	5%	1/10W
R309	1-216-080-00	METAL CHIP	20K	5%	1/10W
R310	1-216-080-00	METAL CHIP	20K	5%	1/10W
R311	1-216-073-00	METAL CHIP	10K	5%	1/10W
R312	1-216-083-00	METAL CHIP	27K	5%	1/10W
R313	1-809-664-31	THERMISTOR, POSITIVE			
R315	1-216-049-00	METAL CHIP	1K	5%	1/10W
R316	1-216-296-00	METAL CHIP	0	5%	1/8W
R317	1-216-296-00	METAL CHIP	0	5%	1/8W
R318	1-216-049-00	METAL CHIP	1K	5%	1/10W
R319	1-216-073-00	METAL CHIP	10K	5%	1/10W
R320	1-216-080-00	METAL CHIP	20K	5%	1/10W
R321	1-216-121-00	METAL CHIP	1M	5%	1/10W
R322	1-216-121-00	METAL CHIP	1M	5%	1/10W
R324	1-216-089-00	METAL CHIP	47K	5%	1/10W
R325	1-216-089-00	METAL CHIP	47K	5%	1/10W
R326	1-216-073-00	METAL CHIP	10K	5%	1/10W
R327	1-216-073-00	METAL CHIP	10K	5%	1/10W
R328	1-216-073-00	METAL CHIP	10K	5%	1/10W
R329	1-216-092-00	METAL GLAZE	62K	5%	1/10W
R330	1-216-073-00	METAL CHIP	10K	5%	1/10W
R333	1-216-049-00	METAL CHIP	1K	5%	1/10W
R334	1-216-049-00	METAL CHIP	1K	5%	1/10W
R335	1-216-097-00	METAL CHIP	100K	5%	1/10W
R336	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R338	1-216-089-00	METAL CHIP	47K	5%	1/10W
R339	1-216-037-00	METAL CHIP	330	5%	1/10W
R340	1-216-049-00	METAL CHIP	1K	5%	1/10W
R341	1-216-089-00	METAL CHIP	47K	5%	1/10W
R343	1-217-671-11	METAL CHIP	1	5%	1/10W
R344	1-217-671-11	METAL CHIP	1	5%	1/10W
R345	1-217-671-11	METAL CHIP	1	5%	1/10W
R346	1-217-671-11	METAL CHIP	1	5%	1/10W
R347	1-216-083-00	METAL CHIP	27K	5%	1/10W
R348	1-216-083-00	METAL CHIP	27K	5%	1/10W
R349	1-216-083-00	METAL CHIP	27K	5%	1/10W
R350	1-216-295-00	METAL CHIP	0	5%	1/10W

Ref. No.	Part No.	Description			Remark
R351	1-216-295-00	METAL CHIP	0	5%	1/10W
R356	1-216-295-00	METAL CHIP	0	5%	1/10W
R357	1-216-049-00	METAL CHIP	1K	5%	1/10W
R358	1-216-049-00	METAL CHIP	1K	5%	1/10W
R359	1-216-049-00	METAL CHIP	1K	5%	1/10W
R360	1-216-073-00	METAL CHIP	10K	5%	1/10W
R361	1-216-049-00	METAL CHIP	1K	5%	1/10W
R362	1-216-049-00	METAL CHIP	1K	5%	1/10W
R363	1-216-049-00	METAL CHIP	1K	5%	1/10W
R364	1-216-049-00	METAL CHIP	1K	5%	1/10W
R365	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R366	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R367	1-216-073-00	METAL CHIP	10K	5%	1/10W
R368	1-216-049-00	METAL CHIP	1K	5%	1/10W
R369	1-216-049-00	METAL CHIP	1K	5%	1/10W
R370	1-216-049-00	METAL CHIP	1K	5%	1/10W
R371	1-216-049-00	METAL CHIP	1K	5%	1/10W
R372	1-216-049-00	METAL CHIP	1K	5%	1/10W
R373	1-216-049-00	METAL CHIP	1K	5%	1/10W
R374	1-216-049-00	METAL CHIP	1K	5%	1/10W
R375	1-216-049-00	METAL CHIP	1K	5%	1/10W
R376	1-216-049-00	METAL CHIP	1K	5%	1/10W
R377	1-216-295-00	METAL CHIP	0	5%	1/10W
R378	1-216-295-00	METAL CHIP	0	5%	1/10W
R379	1-216-295-00	METAL CHIP	0	5%	1/10W
R380	1-216-049-00	METAL CHIP	1K	5%	1/10W
R381	1-216-049-00	METAL CHIP	1K	5%	1/10W
R382	1-216-295-00	METAL CHIP	0	5%	1/10W
R383	1-216-295-00	METAL CHIP	0	5%	1/10W
R384	1-216-295-00	METAL CHIP	0	5%	1/10W
R385	1-216-049-00	METAL CHIP	1K	5%	1/10W
R386	1-216-049-00	METAL CHIP	1K	5%	1/10W
R387	1-216-295-00	METAL CHIP	0	5%	1/10W
R388	1-216-295-00	METAL CHIP	0	5%	1/10W
R389	1-216-049-00	METAL CHIP	1K	5%	1/10W
R390	1-216-049-00	METAL CHIP	1K	5%	1/10W
R391	1-216-049-00	METAL CHIP	1K	5%	1/10W
R392	1-216-049-00	METAL CHIP	1K	5%	1/10W
R393	1-216-049-00	METAL CHIP	1K	5%	1/10W
R394	1-216-049-00	METAL CHIP	1K	5%	1/10W
R396	1-216-049-00	METAL CHIP	1K	5%	1/10W
R397	1-216-049-00	METAL CHIP	1K	5%	1/10W
R398	1-216-049-00	METAL CHIP	1K	5%	1/10W
R399	1-216-089-00	METAL CHIP	47K	5%	1/10W
R400	1-216-295-00	METAL CHIP	0	5%	1/10W
R411	1-216-085-00	METAL CHIP	33K	5%	1/10W
R412	1-216-081-00	METAL CHIP	22K	5%	1/10W
R413	1-216-085-00	METAL CHIP	33K	5%	1/10W
R414	1-216-081-00	METAL CHIP	22K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R415	1-216-105-00	METAL CHIP	220K	5%	1/10W
R416	1-216-093-00	METAL CHIP	68K	5%	1/10W
R417	1-216-081-00	METAL CHIP	22K	5%	1/10W
R418	1-216-105-00	METAL CHIP	220K	5%	1/10W
R419	1-216-093-00	METAL CHIP	68K	5%	1/10W
R420	1-216-081-00	METAL CHIP	22K	5%	1/10W
R421	1-216-105-00	METAL CHIP	220K	5%	1/10W
R422	1-216-093-00	METAL CHIP	68K	5%	1/10W
R423	1-216-081-00	METAL CHIP	22K	5%	1/10W
R424	1-216-105-00	METAL CHIP	220K	5%	1/10W
R425	1-216-093-00	METAL CHIP	68K	5%	1/10W
R426	1-216-081-00	METAL CHIP	22K	5%	1/10W
R435	1-216-295-00	METAL CHIP	0	5%	1/10W
R438	1-216-295-00	METAL CHIP	0	5%	1/10W
R446	1-216-295-00	METAL CHIP	0	5%	1/10W
R449	1-216-295-00	METAL CHIP	0	5%	1/10W
R453	1-216-073-00	METAL CHIP	10K	5%	1/10W
R454	1-216-083-00	METAL CHIP	27K	5%	1/10W
R455	1-216-101-00	METAL CHIP	150K	5%	1/10W
R456	1-216-073-00	METAL CHIP	10K	5%	1/10W
R457	1-216-083-00	METAL CHIP	27K	5%	1/10W
R458	1-216-101-00	METAL CHIP	150K	5%	1/10W
R459	1-216-049-00	METAL CHIP	1K	5%	1/10W
R460	1-216-049-00	METAL CHIP	1K	5%	1/10W
R461	1-216-077-00	METAL CHIP	15K	5%	1/10W
R462	1-216-077-00	METAL CHIP	15K	5%	1/10W
R464	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R465	1-216-025-00	METAL CHIP	100	5%	1/10W
R466	1-216-073-00	METAL CHIP	10K	5%	1/10W
R467	1-216-113-00	METAL CHIP	470K	5%	1/10W
R468	1-216-033-00	METAL CHIP	220	5%	1/10W
R469	1-216-295-00	METAL CHIP	0	5%	1/10W
R470	1-216-097-00	METAL CHIP	100K	5%	1/10W
R471	1-216-033-00	METAL CHIP	220	5%	1/10W
R472	1-216-295-00	METAL CHIP	0	5%	1/10W
R473	1-216-097-00	METAL CHIP	100K	5%	1/10W
R474	1-216-073-00	METAL CHIP	10K	5%	1/10W
R475	1-216-073-00	METAL CHIP	10K	5%	1/10W
R476	1-216-035-00	METAL CHIP	270	5%	1/10W
R477	1-216-041-00	METAL CHIP	470	5%	1/10W
R478	1-216-073-00	METAL CHIP	10K	5%	1/10W
R479	1-216-073-00	METAL CHIP	10K	5%	1/10W
R481	1-216-073-00	METAL CHIP	10K	5%	1/10W
R482	1-216-073-00	METAL CHIP	10K	5%	1/10W
R483	1-216-295-00	METAL CHIP	0	5%	1/10W
R484	1-216-037-00	METAL CHIP	330	5%	1/10W
R485	1-216-089-00	METAL CHIP	47K	5%	1/10W
R486	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R487	1-216-083-00	METAL CHIP	27K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R488	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R489	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R490	1-216-049-00	METAL CHIP	1K	5%	1/10W
R491	1-216-097-00	METAL CHIP	100K	5%	1/10W
R492	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R493	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R494	1-216-073-00	METAL CHIP	10K	5%	1/10W
R495	1-216-073-00	METAL CHIP	10K	5%	1/10W
R496	1-216-073-00	METAL CHIP	10K	5%	1/10W
R497	1-216-073-00	METAL CHIP	10K	5%	1/10W
R498	1-216-073-00	METAL CHIP	10K	5%	1/10W
R499	1-216-077-00	METAL CHIP	15K	5%	1/10W
R500	1-216-073-00	METAL CHIP	10K	5%	1/10W
R501	1-216-073-00	METAL CHIP	10K	5%	1/10W
R502	1-216-077-00	METAL CHIP	15K	5%	1/10W
R503	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R504	1-216-109-00	METAL CHIP	330K	5%	1/10W
R505	1-216-109-00	METAL CHIP	330K	5%	1/10W
R506	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R507	1-216-073-00	METAL CHIP	10K	5%	1/10W
R508	1-216-073-00	METAL CHIP	10K	5%	1/10W
R515	1-216-295-00	METAL CHIP	0	5%	1/10W
R516	1-216-295-00	METAL CHIP	0	5%	1/10W
R517	1-216-295-00	METAL CHIP	0	5%	1/10W
R518	1-216-295-00	METAL CHIP	0	5%	1/10W
R519	1-216-295-00	METAL CHIP	0	5%	1/10W
R520	1-216-295-00	METAL CHIP	0	5%	1/10W
R523	1-216-295-00	METAL CHIP	0	5%	1/10W
R524	1-216-295-00	METAL CHIP	0	5%	1/10W
R525	1-216-295-00	METAL CHIP	0	5%	1/10W
R526	1-216-295-00	METAL CHIP	0	5%	1/10W
R528	1-216-295-00	METAL CHIP	0	5%	1/10W
R529	1-216-049-00	METAL CHIP	1K	5%	1/10W
R530	1-216-295-00	METAL CHIP	0	5%	1/10W
R531	1-216-295-00	METAL CHIP	0	5%	1/10W
R532	1-216-049-00	METAL CHIP	1K	5%	1/10W
R533	1-216-097-00	METAL CHIP	100K	5%	1/10W
R534	1-216-049-00	METAL CHIP	1K	5%	1/10W
R535	1-216-049-00	METAL CHIP	1K	5%	1/10W
R536	1-216-049-00	METAL CHIP	1K	5%	1/10W
R537	1-216-049-00	METAL CHIP	1K	5%	1/10W
R538	1-216-049-00	METAL CHIP	1K	5%	1/10W
R539	1-216-049-00	METAL CHIP	1K	5%	1/10W
R540	1-216-049-00	METAL CHIP	1K	5%	1/10W
R541	1-216-049-00	METAL CHIP	1K	5%	1/10W
R542	1-216-073-00	METAL CHIP	10K	5%	1/10W
R543	1-216-295-00	METAL CHIP	0	5%	1/10W
R544	1-216-295-00	METAL CHIP	0	5%	1/10W
R545	1-216-049-00	METAL CHIP	1K	5%	1/10W

ST-48

Ref. No.	Part No.	Description			Remark
R546	1-216-049-00	METAL CHIP	1K	5%	1/10W
R547	1-216-049-00	METAL CHIP	1K	5%	1/10W
R548	1-216-049-00	METAL CHIP	1K	5%	1/10W
R549	1-216-295-00	METAL CHIP	0	5%	1/10W
R551	1-216-049-00	METAL CHIP	1K	5%	1/10W
R556	1-216-049-00	METAL CHIP	1K	5%	1/10W
R561	1-216-049-00	METAL CHIP	1K	5%	1/10W
R562	1-216-049-00	METAL CHIP	1K	5%	1/10W
R563	1-216-049-00	METAL CHIP	1K	5%	1/10W
R564	1-216-073-00	METAL CHIP	10K	5%	1/10W
R565	1-216-073-00	METAL CHIP	10K	5%	1/10W
R566	1-216-073-00	METAL CHIP	10K	5%	1/10W
R600	1-216-097-00	METAL CHIP	100K	5%	1/10W
R601	1-216-295-00	METAL CHIP	0	5%	1/10W
R603	1-216-295-00	METAL CHIP	0	5%	1/10W
R605	1-216-295-00	METAL CHIP	0	5%	1/10W
R607	1-216-295-00	METAL CHIP	0	5%	1/10W
R609	1-216-295-00	METAL CHIP	0	5%	1/10W
R611	1-216-295-00	METAL CHIP	0	5%	1/10W
R614	1-216-295-00	METAL CHIP	0	5%	1/10W
R616	1-216-081-00	METAL CHIP	22K	5%	1/10W
R617	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R618	1-216-049-00	METAL CHIP	1K	5%	1/10W
R619	1-216-049-00	METAL CHIP	1K	5%	1/10W
R620	1-216-049-00	METAL CHIP	1K	5%	1/10W
R621	1-216-039-00	METAL CHIP	390	5%	1/10W
R622	1-216-023-00	METAL CHIP	82	5%	1/10W
R623	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R624	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R625	1-216-049-00	METAL CHIP	1K	5%	1/10W
R627	1-216-295-00	METAL CHIP	0	5%	1/10W
R634	1-216-118-00	METAL GLAZE	750K	5%	1/10W
R636	1-216-081-00	METAL CHIP	22K	5%	1/10W
R638	1-216-295-00	METAL CHIP	0	5%	1/10W
R639	1-216-295-00	METAL CHIP	0	5%	1/10W
R653	1-216-073-00	METAL CHIP	10K	5%	1/10W
R656	1-216-081-00	METAL CHIP	22K	5%	1/10W
R657	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R658	1-216-049-00	METAL CHIP	1K	5%	1/10W
R659	1-216-049-00	METAL CHIP	1K	5%	1/10W
R660	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R661	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R662	1-216-049-00	METAL CHIP	1K	5%	1/10W
R663	1-216-039-00	METAL CHIP	390	5%	1/10W
R664	1-216-045-00	METAL CHIP	680	5%	1/10W
R665	1-216-043-00	METAL CHIP	560	5%	1/10W
R666	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R676	1-216-081-00	METAL CHIP	22K	5%	1/10W
R677	1-216-065-00	METAL CHIP	4.7K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R678	1-216-049-00	METAL CHIP	1K	5%	1/10W
R679	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R680	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R681	1-216-025-00	METAL CHIP	100	5%	1/10W
R682	1-216-025-00	METAL CHIP	100	5%	1/10W
R685	1-216-295-00	METAL CHIP	0	5%	1/10W
R686	1-216-295-00	METAL CHIP	0	5%	1/10W
R689	1-216-295-00	METAL CHIP	0	5%	1/10W
R690	1-216-043-00	METAL CHIP	560	5%	1/10W
R691	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R692	1-216-049-00	METAL CHIP	1K	5%	1/10W
R693	1-216-081-00	METAL CHIP	22K	5%	1/10W
R694	1-216-295-00	METAL CHIP	0	5%	1/10W (EV-C770E)
R695	1-216-073-00	METAL CHIP	10K	5%	1/10W
R696	1-216-295-00	METAL CHIP	0	5%	1/10W (EV-C770E)
R698	1-216-031-00	METAL CHIP	180	5%	1/10W
R699	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R701	1-216-081-00	METAL CHIP	22K	5%	1/10W
R702	1-216-049-00	METAL CHIP	1K	5%	1/10W
R703	1-216-642-11	METAL CHIP	430	0.5%	1/10W
R704	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R705	1-216-651-11	METAL CHIP	1K	0.5%	1/10W
R706	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R707	1-216-081-00	METAL CHIP	22K	5%	1/10W
R708	1-216-081-00	METAL CHIP	22K	5%	1/10W
R709	1-216-049-00	METAL CHIP	1K	5%	1/10W
R710	1-216-031-00	METAL CHIP	180	5%	1/10W
R712	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R713	1-216-049-00	METAL CHIP	1K	5%	1/10W
R714	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R715	1-216-049-00	METAL CHIP	1K	5%	1/10W
R716	1-216-049-00	METAL CHIP	1K	5%	1/10W
R717	1-216-049-00	METAL CHIP	1K	5%	1/10W
R718	1-216-034-00	METAL CHIP	240	5%	1/10W
R719	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R720	1-216-049-00	METAL CHIP	1K	5%	1/10W
R721	1-216-049-00	METAL CHIP	1K	5%	1/10W
R722	1-216-656-11	METAL CHIP	1.6K	0.5%	1/10W
R723	1-216-657-11	METAL CHIP	1.8K	0.5%	1/10W
R724	1-216-027-00	METAL CHIP	120	5%	1/10W
R725	1-216-049-00	METAL CHIP	1K	5%	1/10W
R726	1-216-049-00	METAL CHIP	1K	5%	1/10W
R727	1-216-025-00	METAL CHIP	100	5%	1/10W
R728	1-216-671-11	METAL CHIP	6.8K	0.5%	1/10W
R729	1-216-665-11	METAL CHIP	3.9K	0.5%	1/10W
R730	1-216-049-00	METAL CHIP	1K	5%	1/10W
R732	1-216-051-00	METAL CHIP	1.2K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R733	1-216-041-00	METAL CHIP	470	5%	1/10W
R734	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R735	1-216-049-00	METAL CHIP	1K	5%	1/10W
R738	1-216-049-00	METAL CHIP	1K	5%	1/10W
R739	1-216-049-00	METAL CHIP	1K	5%	1/10W
R740	1-216-049-00	METAL CHIP	1K	5%	1/10W
R741	1-216-037-00	METAL CHIP	330	5%	1/10W
R742	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R743	1-216-049-00	METAL CHIP	1K	5%	1/10W
R744	1-216-049-00	METAL CHIP	1K	5%	1/10W
R745	1-216-669-11	METAL CHIP	5.6K	0.5%	1/10W
R746	1-216-669-11	METAL CHIP	5.6K	0.5%	1/10W
R747	1-216-049-00	METAL CHIP	1K	5%	1/10W
R748	1-216-073-00	METAL CHIP	10K	5%	1/10W
R749	1-216-073-00	METAL CHIP	10K	5%	1/10W
R751	1-216-001-00	METAL CHIP	10	5%	1/10W
R752	1-216-001-00	METAL CHIP	10	5%	1/10W
R753	1-216-295-00	METAL CHIP	0	5%	1/10W
R755	1-216-295-00	METAL CHIP	0	5%	1/10W
R758	1-216-073-00	METAL CHIP	10K	5%	1/10W
R759	1-216-037-00	METAL CHIP	330	5%	1/10W
R760	1-216-037-00	METAL CHIP	330	5%	1/10W
R761	1-216-073-00	METAL CHIP	10K	5%	1/10W
R762	1-216-295-00	METAL CHIP	0	5%	1/10W
R764	1-216-047-00	METAL CHIP	820	5%	1/10W
R765	1-216-050-00	METAL GLAZE	1.1K	5%	1/10W
R766	1-216-047-00	METAL CHIP	820	5%	1/10W
R767	1-216-049-00	METAL CHIP	1K	5%	1/10W
R769	1-216-295-00	METAL CHIP	0	5%	1/10W
R770	1-216-295-00	METAL CHIP	0	5%	1/10W
R771	1-216-121-00	METAL CHIP	1M	5%	1/10W
R772	1-216-089-00	METAL CHIP	47K	5%	1/10W
R773	1-216-025-00	METAL CHIP	100	5%	1/10W
R775	1-216-047-00	METAL CHIP	820	5%	1/10W
R776	1-216-033-00	METAL CHIP	220	5%	1/10W
R777	1-216-295-00	METAL CHIP	0	5%	1/10W
R778	1-216-033-00	METAL CHIP	220	5%	1/10W
R779	1-216-047-00	METAL CHIP	820	5%	1/10W
R780	1-216-033-00	METAL CHIP	220	5%	1/10W
R781	1-216-019-00	METAL CHIP	56	5%	1/10W
R782	1-216-030-00	METAL CHIP	160	5%	1/10W
R783	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R784	1-216-679-11	METAL CHIP	15K	0.5%	1/10W
R785	1-216-097-00	METAL CHIP	100K	5%	1/10W
R786	1-216-105-00	METAL CHIP	220K	5%	1/10W
R787	1-216-111-00	METAL CHIP	390K	5%	1/10W
R788	1-216-119-00	METAL CHIP	820K	5%	1/10W
R789	1-216-049-00	METAL CHIP	1K	5%	1/10W
R790	1-216-029-00	METAL CHIP	150	5%	1/10W

Ref. No.	Part No.	Description			Remark
R791	1-216-295-00	METAL CHIP	0	5%	1/10W
R792	1-216-121-00	METAL CHIP	1M	5%	1/10W
R793	1-216-121-00	METAL CHIP	1M	5%	1/10W
R794	1-216-077-00	METAL CHIP	15K	5%	1/10W
R795	1-216-085-00	METAL CHIP	33K	5%	1/10W
R796	1-216-025-00	METAL CHIP	100	5%	1/10W
R799	1-216-025-00	METAL CHIP	100	5%	1/10W
R800	1-216-674-11	METAL CHIP	9.1K	0.5%	1/10W
R801	1-216-073-00	METAL CHIP	10K	5%	1/10W
R803	1-216-049-00	METAL CHIP	1K	5%	1/10W
R804	1-216-049-00	METAL CHIP	1K	5%	1/10W
R805	1-216-049-00	METAL CHIP	1K	5%	1/10W
R806	1-216-085-00	METAL CHIP	33K	5%	1/10W
R807	1-216-041-00	METAL CHIP	470	5%	1/10W
R808	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R810	1-216-043-00	METAL CHIP	560	5%	1/10W
R811	1-216-085-00	METAL CHIP	33K	5%	1/10W
R812	1-216-085-00	METAL CHIP	33K	5%	1/10W
R813	1-216-079-00	METAL CHIP	18K	5%	1/10W
R814	1-216-081-00	METAL CHIP	22K	5%	1/10W
R815	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R816	1-216-049-00	METAL CHIP	1K	5%	1/10W
R817	1-216-027-00	METAL CHIP	120	5%	1/10W
R818	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R819	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R820	1-216-021-00	METAL CHIP	68	5%	1/10W
R821	1-216-049-00	METAL CHIP	1K	5%	1/10W
R822	1-216-089-00	METAL CHIP	47K	5%	1/10W
R824	1-216-295-00	METAL CHIP	0	5%	1/10W
R826	1-216-073-00	METAL CHIP	10K	5%	1/10W
R827	1-216-081-00	METAL CHIP	22K	5%	1/10W
R828	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R829	1-216-049-00	METAL CHIP	1K	5%	1/10W
R830	1-216-049-00	METAL CHIP	1K	5%	1/10W
R831	1-216-043-00	METAL CHIP	560	5%	1/10W
R832	1-216-041-00	METAL CHIP	470	5%	1/10W
R835	1-216-089-00	METAL CHIP	47K	5%	1/10W
R836	1-216-043-00	METAL CHIP	560	5%	1/10W
R837	1-216-042-00	METAL CHIP	510	5%	1/10W
R838	1-216-041-00	METAL CHIP	470	5%	1/10W
R840	1-216-295-00	METAL CHIP	0	5%	1/10W
R841	1-216-081-00	METAL CHIP	22K	5%	1/10W
R842	1-216-049-00	METAL CHIP	1K	5%	1/10W
R843	1-216-081-00	METAL CHIP	22K	5%	1/10W
R844	1-216-295-00	METAL CHIP	0	5%	1/10W
R845	1-216-025-00	METAL CHIP	100	5%	1/10W
R846	1-216-049-00	METAL CHIP	1K	5%	1/10W
R847	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R849	1-216-081-00	METAL CHIP	22K	5%	1/10W

ST-48

Ref. No.	Part No.	Description			Remark
R850	1-216-049-00	METAL CHIP	1K	5%	1/10W
R851	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R852	1-216-049-00	METAL CHIP	1K	5%	1/10W
R853	1-216-039-00	METAL CHIP	390	5%	1/10W
R854	1-216-039-00	METAL CHIP	390	5%	1/10W
R855	1-216-041-00	METAL CHIP	470	5%	1/10W
R856	1-216-041-00	METAL CHIP	470	5%	1/10W
R857	1-216-045-00	METAL CHIP	680	5%	1/10W
R858	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R859	1-216-081-00	METAL CHIP	22K	5%	1/10W
R860	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R861	1-216-049-00	METAL CHIP	1K	5%	1/10W
R862	1-216-049-00	METAL CHIP	1K	5%	1/10W
R864	1-216-049-00	METAL CHIP	1K	5%	1/10W
R865	1-216-089-00	METAL CHIP	47K	5%	1/10W
R866	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R867	1-216-295-00	METAL CHIP	0	5%	1/10W
R870	1-216-025-00	METAL CHIP	100	5%	1/10W
R871	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R872	1-216-081-00	METAL CHIP	22K	5%	1/10W
R873	1-216-025-00	METAL CHIP	100	5%	1/10W
R875	1-216-049-00	METAL CHIP	1K	5%	1/10W
R876	1-216-637-11	METAL CHIP	270	0.5%	1/10W
R877	1-216-045-00	METAL CHIP	680	5%	1/10W
R878	1-216-017-00	METAL CHIP	47	5%	1/10W
R879	1-216-641-11	METAL CHIP	390	0.5%	1/10W
R880	1-216-647-11	METAL CHIP	680	0.5%	1/10W
R881	1-216-049-00	METAL CHIP	1K	5%	1/10W
R882	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R883	1-216-025-00	METAL CHIP	100	5%	1/10W
R884	1-216-089-00	METAL CHIP	47K	5%	1/10W
R885	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R886	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R887	1-216-025-00	METAL CHIP	100	5%	1/10W
R888	1-216-081-00	METAL CHIP	22K	5%	1/10W
R889	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R890	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R891	1-216-043-00	METAL CHIP	560	5%	1/10W
R892	1-216-025-00	METAL CHIP	100	5%	1/10W
R894	1-216-049-00	METAL CHIP	1K	5%	1/10W
R895	1-216-025-00	METAL CHIP	100	5%	1/10W
R896	1-216-089-00	METAL CHIP	47K	5%	1/10W
R897	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R898	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R899	1-216-295-00	METAL CHIP	0	5%	1/10W
R900	1-216-025-00	METAL CHIP	100	5%	1/10W
R901	1-216-081-00	METAL CHIP	22K	5%	1/10W
R902	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R903	1-216-295-00	METAL CHIP	0	5%	1/10W

Ref. No.	Part No.	Description			Remark
R904	1-216-295-00	METAL CHIP	0	5%	1/10W
R906	1-216-081-00	METAL CHIP	22K	5%	1/10W
R907	1-216-025-00	METAL CHIP	100	5%	1/10W
R908	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R909	1-216-025-00	METAL CHIP	100	5%	1/10W
R910	1-216-081-00	METAL CHIP	22K	5%	1/10W
R911	1-216-041-00	METAL CHIP	470	5%	1/10W
R912	1-216-097-00	METAL CHIP	100K	5%	1/10W
R913	1-216-081-00	METAL CHIP	22K	5%	1/10W
R914	1-216-091-00	METAL CHIP	56K	5%	1/10W
R915	1-216-049-00	METAL CHIP	1K	5%	1/10W
R916	1-216-295-00	METAL CHIP	0	5%	1/10W
R918	1-216-295-00	METAL CHIP	0	5%	1/10W
R919	1-216-295-00	METAL CHIP	0	5%	1/10W
R920	1-216-089-00	METAL CHIP	47K	5%	1/10W
R921	1-216-033-00	METAL CHIP	220	5%	1/10W
R922	1-216-045-00	METAL CHIP	680	5%	1/10W
R923	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R924	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R925	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R926	1-216-035-00	METAL CHIP	270	5%	1/10W
R927	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R928	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R929	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R930	1-216-033-00	METAL CHIP	220	5%	1/10W
R931	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R933	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R934	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R935	1-216-101-00	METAL CHIP	150K	5%	1/10W
R936	1-216-033-00	METAL CHIP	220	5%	1/10W
R937	1-216-073-00	METAL CHIP	10K	5%	1/10W
R938	1-216-035-00	METAL CHIP	270	5%	1/10W
R939	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R940	1-216-097-00	METAL CHIP	100K	5%	1/10W
R942	1-216-089-00	METAL CHIP	47K	5%	1/10W
R944	1-216-089-00	METAL CHIP	47K	5%	1/10W
R945	1-216-089-00	METAL CHIP	47K	5%	1/10W
R946	1-216-089-00	METAL CHIP	47K	5%	1/10W
R947	1-216-049-00	METAL CHIP	1K	5%	1/10W
R948	1-216-295-00	METAL CHIP	0	5%	1/10W
R949	1-216-025-00	METAL CHIP	100	5%	1/10W (EV-S880E)
R950	1-216-295-00	METAL CHIP	0	5%	1/10W
R951	1-216-057-00	METAL CHIP	2.2K	5%	1/10W (EV-S880E)
R952	1-216-065-00	METAL CHIP	4.7K	5%	1/10W (EV-S880E)
R953	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R954	1-216-057-00	METAL CHIP	2.2K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R955	1-216-056-00	METAL GLAZE	2K	5%	1/10W
R956	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R957	1-216-049-00	METAL CHIP	1K	5%	1/10W
R958	1-216-049-00	METAL CHIP	1K	5%	1/10W
R959	1-216-105-00	METAL CHIP	220K	5%	1/10W
R960	1-216-081-00	METAL CHIP	22K	5%	1/10W
R961	1-216-049-00	METAL CHIP	1K	5%	1/10W
R962	1-216-081-00	METAL CHIP	22K	5%	1/10W
R963	1-216-025-00	METAL CHIP	100	5%	1/10W
R964	1-216-049-00	METAL CHIP	1K	5%	1/10W
R965	1-216-049-00	METAL CHIP	1K	5%	1/10W
R966	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R967	1-216-081-00	METAL CHIP	22K	5%	1/10W
R968	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R969	1-216-049-00	METAL CHIP	1K	5%	1/10W
R970	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R971	1-216-295-00	METAL CHIP	0	5%	1/10W
R972	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R973	1-216-081-00	METAL CHIP	22K	5%	1/10W
R976	1-216-081-00	METAL CHIP	22K	5%	1/10W
R977	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R978	1-216-081-00	METAL CHIP	22K	5%	1/10W
R979	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R980	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R981	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R982	1-216-043-00	METAL CHIP	560	5%	1/10W
R983	1-216-043-00	METAL CHIP	560	5%	1/10W
R984	1-216-043-00	METAL CHIP	560	5%	1/10W
R985	1-216-043-00	METAL CHIP	560	5%	1/10W
R986	1-216-022-00	METAL CHIP	75	5%	1/10W (EV-C770E)
R987	1-216-022-00	METAL CHIP	75	5%	1/10W
R988	1-216-043-00	METAL CHIP	560	5%	1/10W
R989	1-216-043-00	METAL CHIP	560	5%	1/10W
R990	1-216-022-00	METAL CHIP	75	5%	1/10W
R991	1-216-043-00	METAL CHIP	560	5%	1/10W
R992	1-216-043-00	METAL CHIP	560	5%	1/10W
R993	1-216-022-00	METAL CHIP	75	5%	1/10W
R994	1-216-043-00	METAL CHIP	560	5%	1/10W
R995	1-216-043-00	METAL CHIP	560	5%	1/10W
R996	1-216-022-00	METAL CHIP	75	5%	1/10W
R997	1-216-043-00	METAL CHIP	560	5%	1/10W
R998	1-216-043-00	METAL CHIP	560	5%	1/10W
R999	1-216-022-00	METAL CHIP	75	5%	1/10W
		< VARIABLE RESISTOR >			
RV703	1-238-854-11	RES, ADJ, CERMET 1K			
RV704	1-238-854-11	RES, ADJ, CERMET 2.2K			

Ref. No.	Part No.	Description			Remark
		< VIBRATOR >			
X001	1-567-098-00	OSCILLATOR, CRYSTAL (32KHz)			
X002	1-579-368-31	VIBRATOR, CRYSTAL (12MHz)			
X701	1-577-704-21	VIBRATOR, CRYSTAL (4.22MHz)			
X702	1-567-733-11	VIBRATOR, CRYSTAL (17.73MHz)			
X703	1-567-344-21	VIBRATOR, CRYSTAL (VCO) (17.73MHz)			
X901	1-577-289-11	VIBRATOR, CRYSTAL (17.73MHz)			
X902	1-577-165-11	VIBLATOR, CERAMIC (500KHz)			
**********					
*	A-7063-509-A	TU-100 BOARD, COMPLETE (EV-S880E ONLY) (Ref. No 6,000 servies)			
		**********			
	1-575-454-11	WIRE, FLAT TYPE (28P)			
		< CAPACITOR >			
C001	1-124-916-11	ELECT	22uF	20%	63V
C002	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C003	1-124-916-11	ELECT	22uF	20%	63V
C004	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C005	1-124-360-00	ELECT	1000uF	20%	16V
C006	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C007	1-124-927-11	ELECT	4.7uF	20%	100V
C011	1-124-916-11	ELECT	22uF	20%	63V
C012	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C013	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C014	1-124-907-11	ELECT	10uF	20%	50V
C015	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C016	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C017	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C019	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C020	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C021	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C022	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C023	1-124-257-00	ELECT	2.2uF	20%	50V
C029	1-124-916-11	ELECT	22uF	20%	63V
C030	1-124-916-11	ELECT	22uF	20%	63V
C032	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C033	1-124-916-11	ELECT	22uF	20%	63V
C037	1-126-157-11	ELECT	10uF	20%	16V
C039	1-126-157-11	ELECT	10uF	20%	16V
C042	1-136-161-00	MYLAR	0.047uF	10%	50V
		< CONNECTOR >			
CN001	1-563-605-11	CONNECTOR, FLEXIBLE 28P			

TU-100

Ref. No.	Part No.	Description				Remark
		< DIODE >				
D002	8-719-400-18	DIODE	MA152WK			
D003	8-719-200-36	DIODE	E10QS04			
		< IC >				
IC001	8-759-157-40	IC	uPC574J			
		< IF BLOCK >				
⚠IF001	1-466-167-11	IF BLOCK (IFX-389C)				
		< JUMPER RESISTOR >				
JR001	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR002	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR003	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR004	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR005	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR006	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR008	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR011	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR012	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR013	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR014	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR015	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR016	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR017	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR018	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR019	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR020	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR021	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR023	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR025	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR027	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR032	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR033	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR034	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR035	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR036	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR038	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR039	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR040	1-216-296-00	METAL CHIP	0	5%	1/8W	
		< COIL >				
L001	1-408-413-00	INDUCTOR	22uH			
L002	1-408-411-00	INDUCTOR	15uH			
L003	1-408-408-00	INDUCTOR	8.2uH			
L004	1-408-408-00	INDUCTOR	8.2uH			
L005	1-408-408-00	INDUCTOR	8.2uH			
L007	1-408-408-00	INDUCTOR	8.2uH			
L009	1-408-413-00	INDUCTOR	22uH			
		< MULTIPEL SOUND DECODER >				
⚠MP001	1-466-144-11	DECORDER BLOCK (MPL-389)				
		< TRANSISTOR >				
Q001	8-729-120-28	TRANSISTOR	2SC1623-L5L6			
Q003	8-729-216-22	TRANSISTOR	2SA1162-G			
Q004	8-729-120-28	TRANSISTOR	2SC1623-L5L6			
Q006	8-729-120-28	TRANSISTOR	2SC1623-L5L6			
Q010	8-729-901-01	TRANSISTOR	DTC144EK			
Q014	8-729-216-22	TRANSISTOR	2SA1162-G			
Q101	8-729-901-01	TRANSISTOR	DTC144EK			
		< RESISTOR >				
R001	1-216-295-00	METAL CHIP	0	5%	1/10W	
R002	1-216-295-00	METAL CHIP	0	5%	1/10W	
R003	1-216-295-00	METAL CHIP	0	5%	1/10W	
R004	1-216-212-00	METAL GLAZE	3.9K	5%	1/8W	
R005	1-216-210-00	METAL GLAZE	3.3K	5%	1/8W	
R008	1-216-025-00	METAL CHIP	100	5%	1/10W	
R009	1-216-070-00	METAL CHIP	7.5K	5%	1/10W	
R010	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R011	1-216-037-00	METAL CHIP	330	5%	1/10W	
R012	1-216-039-00	METAL CHIP	390	5%	1/10W	
R013	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R014	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R015	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R016	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R017	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R018	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R021	1-216-295-00	METAL CHIP	0	5%	1/10W	
R022	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R023	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R024	1-216-295-00	METAL CHIP	0	5%	1/10W	
R025	1-216-295-00	METAL CHIP	0	5%	1/10W	
R029	1-216-295-00	METAL CHIP	0	5%	1/10W	
R034	1-216-295-00	METAL CHIP	0	5%	1/10W	
R044	1-216-295-00	METAL CHIP	0	5%	1/10W	
R047	1-216-295-00	METAL CHIP	0	5%	1/10W	
R065	1-216-295-00	METAL CHIP	0	5%	1/10W	
R067	1-216-295-00	METAL CHIP	0	5%	1/10W	
R068	1-216-295-00	METAL CHIP	0	5%	1/10W	
R069	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R070	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R073	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R077	1-216-064-00	METAL CHIP	4.3K	5%	1/10W	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
R078	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R079	1-216-089-00	METAL CHIP	47K	5% 1/10W	
R080	1-216-089-00	METAL CHIP	47K	5% 1/10W	
R083	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R090	1-216-089-00	METAL CHIP	47K	5% 1/10W	
R092	1-216-295-00	METAL CHIP	0	5% 1/10W	
R096	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R101	1-216-057-00	METAL CHIP	2.2K	5% 1/10W	
R103	1-216-295-00	METAL CHIP	0	5% 1/10W	
R104	1-216-295-00	METAL CHIP	0	5% 1/10W	
		< VARIABLE RESISTOR >			
RV001	1-228-995-00	RES, ADJ, METAL 22K			
		< TUNER >			
⚠TU001	1-465-260-31	TUNER, ET (BTP-2C401)			
**********					
*	A-7063-513-A	UC-16 BOARD, COMPLETE (Ref. No 5,000 series)			
		**********			
		< CONNECTOR >			
CN911	1-566-532-11	CONNECTOR, FPC (ZIF) 16P			
CN912	1-566-527-11	CONNECTOR, FPC (ZIF) 11P			
CN913	1-566-529-11	CONNECTOR, FPC (ZIF) 13P			
		< IC LINK >			
⚠PS999	1-532-833-41	LINK, IC 0.25A			
		< RESISTOR >			
R995	1-216-043-00	METAL CHIP	560	5% 1/10W	
**********					
*	A-7063-505-A	VA-79 BOARD, COMPLETE (Ref. No 2,000 series)			
		**********			
*	3-947-322-01	CASE (MAIN), SHIELD, CCD			
*	3-947-324-01	LID, REAR, CCD SHIELD CASE			
		< CAPACITOR >			
C101	1-126-157-11	ELECT	10uF	20% 16V	
C102	1-164-005-11	CERAMIC CHIP	0.47uF	25V	
C104	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C105	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C106	1-164-222-11	CERAMIC CHIP	0.22uF	25V	
C107	1-164-005-11	CERAMIC CHIP	0.47uF	25V	
C108	1-126-157-11	ELECT	10uF	20% 16V	
C109	1-126-163-11	ELECT	4.7uF	20% 50V	

Ref. No.	Part No.	Description			Remark
C110	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C111	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C112	1-126-157-11	ELECT	10uF	20%	16V
C113	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C114	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C115	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C116	1-126-154-11	ELECT	47uF	20%	6.3V
C117	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C118	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C119	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C120	1-126-157-11	ELECT	10uF	20%	16V
C121	1-126-157-11	ELECT	10uF	20%	16V
C122	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C123	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C124	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C125	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C126	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C127	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C128	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C129	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C130	1-126-157-11	ELECT	10uF	20%	16V
C131	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C132	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C133	1-126-157-11	ELECT	10uF	20%	16V
C134	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C135	1-126-162-11	ELECT	3.3uF	20%	50V
C136	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C137	1-126-157-11	ELECT	10uF	20%	16V
C138	1-126-162-11	ELECT	3.3uF	20%	50V
C139	1-126-157-11	ELECT	10uF	20%	16V
C152	1-124-638-11	ELECT	22uF	20%	10V
C153	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C155	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C156	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C157	1-124-638-11	ELECT	22uF	20%	10V
C158	1-126-157-11	ELECT	10uF	20%	16V
C164	1-124-638-11	ELECT	22uF	20%	10V
C166	1-124-638-11	ELECT	22uF	20%	10V
C168	1-126-154-11	ELECT	47uF	20%	6.3V
C169	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C170	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C172	1-126-154-11	ELECT	47uF	20%	6.3V
C173	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C174	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C176	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C177	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C178	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C179	1-163-253-11	CERAMIC CHIP	120PF	5%	50V
C182	1-163-038-00	CERAMIC CHIP	0.1uF		25V

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

VA-79

Ref. No.	Part No.	Description			Remark
C183	1-126-154-11	ELECT	47uF	20%	6. 3V
C185	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C192	1-126-154-11	ELECT	47uF	20%	6. 3V
C193	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C194	1-126-301-11	ELECT	1uF	20%	50V
C250	1-126-154-11	ELECT	47uF	20%	6. 3V
C251	1-124-638-11	ELECT	22uF	20%	10V
C252	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C253	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C254	1-124-638-11	ELECT	22uF	20%	10V
C255	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C256	1-124-638-11	ELECT	22uF	20%	10V
C257	1-124-638-11	ELECT	22uF	20%	10V
C258	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C259	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C260	1-124-638-11	ELECT	22uF	20%	10V
C261	1-124-638-11	ELECT	22uF	20%	10V
C263	1-126-154-11	ELECT	47uF	20%	6. 3V
C264	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C280	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C301	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C302	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C303	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C316	1-126-154-11	ELECT	47uF	20%	6. 3V
C317	1-126-154-11	ELECT	47uF	20%	6. 3V
C318	1-126-154-11	ELECT	47uF	20%	6. 3V
C321	1-163-019-00	CERAMIC CHIP	0. 0068uF	10%	50V
C322	1-124-257-00	ELECT	2. 2uF	20%	50V
C323	1-124-254-00	ELECT	0. 68uF	20%	50V
C324	1-126-157-11	ELECT	10uF	20%	16V
C325	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C326	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C327	1-163-227-11	CERAMIC CHIP	10PF	0. 5PF	50V
C329	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C331	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C332	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C333	1-126-301-11	ELECT	1uF	20%	50V
C340	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C341	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C343	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C350	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C351	1-124-638-11	ELECT	22uF	20%	10V
C352	1-163-033-00	CERAMIC CHIP	0. 022uF		50V
C360	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C363	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C364	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C365	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C401	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C402	1-163-031-11	CERAMIC CHIP	0. 01uF		50V

Ref. No.	Part No.	Description			Remark
C405	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C406	1-163-038-00	CERAMIC CHIP	0. 1uF		25V
C407	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C408	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C413	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C414	1-163-038-00	CERAMIC CHIP	0. 1uF		25V
C415	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C416	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C417	1-126-157-11	ELECT	10uF	20%	16V
C418	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C419	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C420	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C421	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C422	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C423	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C424	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C425	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C426	1-163-102-00	CERAMIC CHIP	24PF	5%	50V
C427	1-163-087-00	CERAMIC CHIP	4PF		50V
C429	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C430	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C431	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C432	1-163-222-11	CERAMIC CHIP	5PF	0. 25PF	50V
C433	1-163-038-00	CERAMIC CHIP	0. 1uF		25V
C436	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C437	1-126-157-11	ELECT	10uF	20%	16V
C438	1-163-224-11	CERAMIC CHIP	7PF	0. 25PF	50V
C439	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C440	1-163-091-00	CERAMIC CHIP	8PF		50V
C441	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C442	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C443	1-126-157-11	ELECT	10uF	20%	16V
C444	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C446	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C447	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C448	1-163-257-11	CERAMIC CHIP	180PF	5%	50V
C449	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C450	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C451	1-124-638-11	ELECT	22uF	20%	10V
C452	1-126-154-11	ELECT	47uF	20%	6. 3V
C453	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C454	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C455	1-163-017-00	CERAMIC CHIP	0. 0047uF	5%	50V
C456	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C457	1-163-253-11	CERAMIC CHIP	120PF	5%	50V
C458	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
C459	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C460	1-163-257-11	CERAMIC CHIP	180PF	5%	50V
C462	1-163-253-11	CERAMIC CHIP	120PF	5%	50V

Ref. No.	Part No.	Description			Remark
C463	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C470	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C471	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C472	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C473	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C474	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C475	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C476	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C477	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C478	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
C479	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C480	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C481	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C484	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C486	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C489	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C493	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C494	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C495	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C496	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C497	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C499	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C504	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C505	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C506	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C507	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C508	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C509	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C513	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C514	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C515	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C516	1-126-154-11	ELECT	47uF	20%	6.3V
C520	1-124-257-00	ELECT	2.2uF	20%	50V
C525	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C526	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C527	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C528	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C603	1-126-154-11	ELECT	47uF	20%	6.3V
C604	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C605	1-126-154-11	ELECT	47uF	20%	6.3V
C606	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C607	1-126-154-11	ELECT	47uF	20%	6.3V
C608	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
C630	1-126-301-11	ELECT	1uF	20%	50V
C633	1-126-157-11	ELECT	10uF	20%	16V
C638	1-126-154-11	ELECT	47uF	20%	6.3V
C639	1-126-154-11	ELECT	47uF	20%	6.3V
C702	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C704	1-163-245-11	CERAMIC CHIP	56PF	5%	50V

Ref. No.	Part No.	Description			Remark
C705	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C706	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C751	1-124-638-11	ELECT	22uF	20%	10V
C752	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C753	1-163-118-00	CERAMIC CHIP	110PF	5%	50V
C754	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C755	1-124-257-00	ELECT	2.2uF	20%	50V
C756	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C757	1-126-163-11	ELECT	4.7uF	20%	50V
C758	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C759	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C760	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C761	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C762	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C763	1-126-301-11	ELECT	1uF	20%	50V
C764	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C765	1-163-085-00	CERAMIC CHIP	2PF		50V
C766	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C767	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C800	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C801	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C802	1-126-162-11	ELECT	3.3uF	20%	50V
C803	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C806	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C807	1-126-162-11	ELECT	3.3uF	20%	50V
C808	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C809	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C810	1-126-162-11	ELECT	3.3uF	20%	50V
C811	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C812	1-126-162-11	ELECT	3.3uF	20%	50V
C813	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C823	1-126-162-11	ELECT	3.3uF	20%	50V
C824	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C825	1-126-162-11	ELECT	3.3uF	20%	50V
C826	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C828	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C829	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C830	1-126-157-11	ELECT	10uF	20%	16V
C831	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C832	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C833	1-126-157-11	ELECT	10uF	20%	16V
C834	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C835	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C836	1-126-157-11	ELECT	10uF	20%	16V
C901	1-126-157-11	ELECT	10uF	20%	16V
C902	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C903	1-124-257-00	ELECT	2.2uF	20%	50V
C904	1-126-157-11	ELECT	10uF	20%	16V
C905	1-126-163-11	ELECT	4.7uF	20%	50V

VA-79

Ref. No.	Part No.	Description			Remark
C906	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C907	1-126-154-11	ELECT	47uF	20%	6.3V
C908	1-126-163-11	ELECT	4.7uF	20%	50V
C909	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C910	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C911	1-126-163-11	ELECT	4.7uF	20%	50V
C912	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C913	1-126-157-11	ELECT	10uF	20%	16V
C914	1-124-229-00	ELECT	33uF	20%	10V
C915	1-126-301-11	ELECT	1uF	20%	50V
C916	1-126-154-11	ELECT	47uF	20%	6.3V
C917	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C918	1-124-638-11	ELECT	22uF	20%	10V
C919	1-124-589-11	ELECT	47uF	20%	16V
C920	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C921	1-124-589-11	ELECT	47uF	20%	16V
C922	1-124-638-11	ELECT	22uF	20%	10V
C923	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C924	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C925	1-126-177-11	ELECT	100uF	20%	10V
C926	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C927	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C928	1-126-163-11	ELECT	4.7uF	20%	50V
C929	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C930	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C931	1-126-163-11	ELECT	4.7uF	20%	50V
C932	1-126-154-11	ELECT	47uF	20%	6.3V
C933	1-126-163-11	ELECT	4.7uF	20%	50V
C934	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C935	1-126-157-11	ELECT	10uF	20%	16V
C936	1-124-257-00	ELECT	2.2uF	20%	50V
C937	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C938	1-126-157-11	ELECT	10uF	20%	16V
C939	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C940	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C942	1-126-301-11	ELECT	1uF	20%	50V
C943	1-164-005-00	CERAMIC CHIP	0.47F		25V
C944	1-164-005-00	CERAMIC CHIP	0.47F		25V
C945	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C946	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C947	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C948	1-126-301-11	ELECT	1uF	20%	50V
C949	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C950	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C951	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C952	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C953	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C954	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C955	1-163-031-11	CERAMIC CHIP	0.01uF		50V

Ref. No.	Part No.	Description			Remark
C956	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C957	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C959	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C960	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C961	1-124-292-00	ELECT	33uF	20%	6.3V
C963	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C965	1-124-292-00	ELECT	33uF	20%	6.3V
C966	1-126-163-11	ELECT	4.7uF	20%	50V
C969	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C970	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C971	1-126-157-11	ELECT	10uF	20%	16V
C973	1-126-157-11	ELECT	10uF	20%	16V
C974	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C975	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C976	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C977	1-126-157-11	ELECT	10uF	20%	16V
C980	1-126-163-11	ELECT	4.7uF	20%	50V
C981	1-126-163-11	ELECT	4.7uF	20%	50V
C984	1-126-157-11	ELECT	10uF	20%	16V

< FILTER >

CF301	1-577-162-11	FILTER, CERAMIC (5.16MHz)

< CONNECTOR >

CN101	1-568-084-11	CONNECTOR (RECEPTALE) 30P
CN102	1-568-084-11	CONNECTOR (RECEPTALE) 30P

< DIODE >

D101	8-719-400-18	DIODE	MA152WK
D102	8-719-400-18	DIODE	MA152WK
D103	8-719-404-46	DIODE	MA110
D201	8-719-400-18	DIODE	MA152WK
D301	8-719-404-46	DIODE	MA110
D302	8-719-404-46	DIODE	MA110
D601	8-719-400-18	DIODE	MA152WK
D751	8-719-400-18	DIODE	MA152WK

< FILTER >

FL101	1-415-764-21	DELAY LINE, LC
FL104	1-236-775-11	FILTER, LOW PASS (DEM)
FL301	1-236-849-11	FILTER, BAND PASS
FL302	1-236-186-11	FILTER, BAND PASS
FL602	1-236-774-11	FILTER, LOW PASS (Y)
FL751	1-236-188-11	FILTER, BAND PASS
FL801	1-239-236-11	ENCAPSULATED COMPONENT
FL802	1-239-236-11	ENCAPSULATED COMPONENT
FL803	1-239-236-11	ENCAPSULATED COMPONENT
FL804	1-239-236-11	ENCAPSULATED COMPONENT

Ref. No.	Part No.	Description	Remark
FL805	1-239-236-11	ENCAPSULATED COMPONENT	
FL830	1-236-848-21	FILTER, LOW PASS	
FL831	1-239-010-11	FILTER, LOW PASS (CCD. PAL. Y)	
FL901	1-236-837-21	FILTER, BAND PASS	
FL902	1-236-838-21	FILTER, BAND PASS	
		< IC >	
IC101	8-752-054-87	IC CXA1207AQ	
IC103	8-759-710-86	IC NJM2233BM	
IC104	8-759-711-47	IC NJM2209M	
IC105	8-759-710-86	IC NJM2233BM	
IC106	8-759-710-86	IC NJM2233BM	
IC108	8-759-009-10	IC MC14069UBF	
IC109	8-759-009-19	IC MC14081BF	
IC110	8-759-009-10	IC MC14069UBF	
IC111	8-759-507-17	IC PQ30RV1	
IC301	8-752-039-34	IC CXA1208Q	
IC401	8-752-058-03	IC CXA1509AQ	
IC402	8-759-710-86	IC NJM2233BM	
IC501	8-759-710-07	IC NJM2234M	
IC751	8-752-031-49	IC CXA1203M	
IC801	8-752-333-24	IC CXL1506M	
IC803	8-752-333-24	IC CXL1506M	
IC901	8-759-077-11	IC CXA1542Q	
IC902	8-759-093-41	IC AN3900SC-E2	
IC903	8-759-234-77	IC TC4S66F	
		< JUMPER RESISTOR >	
JR401	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR402	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR403	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR802	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR804	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR805	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR806	1-216-296-00	METAL CHIP 0 5% 1/8W	
		< COIL >	
L101	1-408-978-21	INDUCTOR 47uH	
L102	1-408-968-21	INDUCTOR 6.8uH	
L105	1-408-975-21	INDUCTOR 27uH	
L107	1-408-970-21	INDUCTOR 10uH	
L112	1-408-967-21	INDUCTOR 5.6uH	
L113	1-408-970-21	INDUCTOR 10uH	
L114	1-408-977-21	INDUCTOR 39uH	
L116	1-408-974-21	INDUCTOR 22uH	
L118	1-408-978-21	INDUCTOR 47uH	
L209	1-408-975-21	INDUCTOR 27uH	
L251	1-408-977-21	INDUCTOR 39uH	
L252	1-408-983-21	INDUCTOR 120uH	
L253	1-408-977-21	INDUCTOR 39uH	
L280	1-407-169-XX	INDUCTOR 100uH	
L301	1-407-169-XX	INDUCTOR 100uH	
L307	1-408-975-21	INDUCTOR 27uH	
L308	1-408-978-21	INDUCTOR 47uH	
L402	1-408-973-21	INDUCTOR 18uH	
L403	1-408-964-21	INDUCTOR 3.3uH	
L405	1-407-169-XX	INDUCTOR 100uH	
L406	1-408-975-21	INDUCTOR 27uH	
L407	1-408-973-21	INDUCTOR 18uH	
L408	1-408-973-21	INDUCTOR 18uH	
L409	1-408-975-21	INDUCTOR 27uH	
L410	1-407-169-XX	INDUCTOR 100uH	
L411	1-408-987-21	INDUCTOR 330uH	
L412	1-408-983-21	INDUCTOR 120uH	
L413	1-408-983-21	INDUCTOR 120uH	
L414	1-408-987-21	INDUCTOR 330uH	
L415	1-408-948-00	INDUCTOR 220uH	
L419	1-408-976-21	INDUCTOR 33uH	
L420	1-408-987-21	INDUCTOR 330uH	
L421	1-410-072-21	INDUCTOR 820uH	
L422	1-408-985-21	INDUCTOR 180uH	
L423	1-408-968-21	INDUCTOR 6.8uH	
L424	1-408-963-11	INDUCTOR 2.7uH	
L425	1-408-968-21	INDUCTOR 6.8uH	
L426	1-408-969-21	INDUCTOR 8.2uH	
L428	1-408-983-21	INDUCTOR 120uH	
L429	1-408-981-21	INDUCTOR 82uH	
L431	1-407-169-XX	INDUCTOR 100uH	
L432	1-408-983-21	INDUCTOR 120uH	
L433	1-408-984-21	INDUCTOR 150uH	
L451	1-408-948-00	INDUCTOR 220uH	
L506	1-408-983-21	INDUCTOR 120uH	
L518	1-407-169-XX	INDUCTOR 100uH	
L601	1-408-974-21	INDUCTOR 22uH	
L602	1-407-169-XX	INDUCTOR 100uH	
L805	1-408-978-21	INDUCTOR 47uH	
L806	1-408-978-21	INDUCTOR 47uH	
L814	1-408-978-21	INDUCTOR 47uH	
L815	1-408-978-21	INDUCTOR 47uH	
L901	1-407-169-XX	INDUCTOR 100uH	
L902	1-407-169-XX	INDUCTOR 100uH	
L903	1-407-169-XX	INDUCTOR 100uH	
		< TRANSISTOR >	
Q101	8-729-420-20	TRANSISTOR XN4312	
Q102	8-729-420-20	TRANSISTOR XN4312	
Q103	8-729-420-20	TRANSISTOR XN4312	
Q104	8-729-403-24	TRANSISTOR XN4210	

VA-79

Ref. No.	Part No.	Description		Remark
Q105	8-729-900-53	TRANSISTOR	DTC114EK	
Q110	8-729-421-90	TRANSISTOR	XN4113	
Q111	8-729-420-20	TRANSISTOR	XN4312	
Q116	8-729-424-18	TRANSISTOR	UN2113	
Q117	8-729-216-22	TRANSISTOR	2SA1162-G	
Q119	8-729-202-38	TRANSISTOR	2SC3326N	
Q120	8-729-202-38	TRANSISTOR	2SC3326N	
Q121	8-729-420-12	TRANSISTOR	XN4213	
Q122	8-729-421-90	TRANSISTOR	XN4113	
Q129	8-729-424-18	TRANSISTOR	UN2113	
Q130	8-729-421-19	TRANSISTOR	UN2213	
Q133	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q135	8-729-102-07	TRANSISTOR	2SC2223-F13	
Q136	8-729-421-90	TRANSISTOR	XN4113	
Q137	8-729-421-19	TRANSISTOR	UN2213	
Q143	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q144	8-729-102-07	TRANSISTOR	2SC2223-F13	
Q145	8-729-403-24	TRANSISTOR	XN4210	
Q150	8-729-420-20	TRANSISTOR	XN4312	
Q151	8-729-421-19	TRANSISTOR	UN2213	
Q152	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q153	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q154	8-729-102-07	TRANSISTOR	2SC2223-F13	
Q155	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q201	8-729-424-18	TRANSISTOR	UN2113	
Q202	8-729-424-18	TRANSISTOR	UN2113	
Q250	8-729-421-19	TRANSISTOR	UN2213	
Q251	8-729-402-19	TRANSISTOR	XN6501	
Q252	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q253	8-729-402-19	TRANSISTOR	XN6501	
Q254	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q255	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q256	8-729-421-90	TRANSISTOR	XN4113	
Q257	8-729-402-19	TRANSISTOR	XN6501	
Q301	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q302	8-729-421-19	TRANSISTOR	UN2213	
Q305	8-729-403-24	TRANSISTOR	XN4210	
Q311	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q313	8-729-424-18	TRANSISTOR	UN2113	
Q314	8-729-420-12	TRANSISTOR	XN4213	
Q315	8-729-420-20	TRANSISTOR	XN4312	
Q320	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q321	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q322	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q404	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q408	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q410	8-729-402-19	TRANSISTOR	XN6501	
Q411	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q414	8-729-102-07	TRANSISTOR	2SC2223-F13	
Q415	8-729-420-12	TRANSISTOR	XN4213	
Q416	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q417	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q418	8-729-421-19	TRANSISTOR	UN2213	
Q419	8-729-424-18	TRANSISTOR	UN2113	
Q420	8-729-402-19	TRANSISTOR	XN6501	
Q421	8-729-420-12	TRANSISTOR	XN4213	
Q428	8-729-216-22	TRANSISTOR	2SA1162-G	
Q503	8-729-421-19	TRANSISTOR	UN2213	
Q504	8-729-424-18	TRANSISTOR	UN2113	
Q505	8-729-402-19	TRANSISTOR	XN6501	
Q506	8-729-402-19	TRANSISTOR	XN6501	
Q510	8-729-421-19	TRANSISTOR	UN2213	
Q511	8-729-216-22	TRANSISTOR	2SA1162-G	
Q515	8-729-216-22	TRANSISTOR	2SA1162-G	
Q516	8-729-421-19	TRANSISTOR	UN2213	
Q517	8-729-216-22	TRANSISTOR	2SA1162-G	
Q518	8-729-216-22	TRANSISTOR	2SA1162-G	
Q519	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q520	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q603	8-729-403-24	TRANSISTOR	XN4210	
Q604	8-729-216-22	TRANSISTOR	2SA1162-G	
Q609	8-729-420-12	TRANSISTOR	XN4213	
Q751	8-729-421-19	TRANSISTOR	UN2213	
Q753	8-729-402-19	TRANSISTOR	XN6501	
Q754	8-729-421-19	TRANSISTOR	UN2213	
Q755	8-729-421-19	TRANSISTOR	UN2213	
Q756	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q830	8-729-216-22	TRANSISTOR	2SA1162-G	
Q831	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q832	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q833	8-729-216-22	TRANSISTOR	2SA1162-G	
Q834	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q901	8-729-402-19	TRANSISTOR	XN6501	
Q902	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q904	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q912	8-729-902-99	TRANSISTOR	DTC144TK	
Q913	8-729-421-19	TRANSISTOR	UN2213	
Q915	8-729-402-19	TRANSISTOR	XN6501	
Q916	8-729-402-19	TRANSISTOR	XN6501	
Q917	8-729-421-19	TRANSISTOR	UN2213	
Q918	8-729-421-19	TRANSISTOR	UN2213	

< RESISTOR >

R101	1-216-047-00	METAL CHIP	820	5%	1/10W
R102	1-216-073-00	METAL CHIP	10K	5%	1/10W
R103	1-216-073-00	METAL CHIP	10K	5%	1/10W
R104	1-216-073-00	METAL CHIP	10K	5%	1/10W
R105	1-216-073-00	METAL CHIP	10K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R106	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R107	1-216-039-00	METAL CHIP	390	5%	1/10W
R110	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R111	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R112	1-216-081-00	METAL CHIP	22K	5%	1/10W
R113	1-216-073-00	METAL CHIP	10K	5%	1/10W
R115	1-216-049-00	METAL CHIP	1K	5%	1/10W
R116	1-216-699-11	METAL CHIP	100K	0.5%	1/10W
R118	1-216-043-00	METAL CHIP	560	5%	1/10W
R119	1-216-049-00	METAL CHIP	1K	5%	1/10W
R120	1-216-085-00	METAL CHIP	33K	5%	1/10W
R121	1-216-049-00	METAL CHIP	1K	5%	1/10W
R123	1-216-101-00	METAL CHIP	150K	5%	1/10W
R124	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W
R125	1-216-665-11	METAL CHIP	3.9K	0.5%	1/10W
R126	1-216-645-11	METAL CHIP	560	0.5%	1/10W
R127	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R128	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R129	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R130	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R131	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R132	1-216-089-00	METAL CHIP	47K	5%	1/10W
R133	1-216-653-11	METAL CHIP	1.2K	0.5%	1/10W
R134	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W
R135	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W
R136	1-216-647-11	METAL CHIP	680	0.5%	1/10W
R137	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W
R138	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R139	1-216-079-00	METAL CHIP	18K	5%	1/10W
R140	1-216-643-11	METAL CHIP	470	0.5%	1/10W
R141	1-216-641-11	METAL CHIP	390	0.5%	1/10W
R142	1-216-031-00	METAL CHIP	180	5%	1/10W
R143	1-216-697-11	METAL CHIP	82K	0.5%	1/10W
R144	1-216-691-11	METAL CHIP	47K	0.5%	1/10W
R146	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R147	1-216-049-00	METAL CHIP	1K	5%	1/10W
R148	1-216-049-00	METAL CHIP	1K	5%	1/10W
R149	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R150	1-216-041-00	METAL CHIP	470	5%	1/10W
R151	1-216-083-00	METAL CHIP	27K	5%	1/10W
R152	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R154	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R156	1-216-113-00	METAL CHIP	470K	5%	1/10W
R157	1-216-073-00	METAL CHIP	10K	5%	1/10W
R158	1-216-121-00	METAL CHIP	1M	5%	1/10W
R160	1-216-295-00	METAL CHIP	0	5%	1/10W
R161	1-216-107-00	METAL CHIP	270K	5%	1/10W
R162	1-216-089-00	METAL CHIP	47K	5%	1/10W
R163	1-216-295-00	METAL CHIP	0	5%	1/10W

Ref. No.	Part No.	Description			Remark
R166	1-216-295-00	METAL CHIP	0	5%	1/10W
R167	1-216-295-00	METAL CHIP	0	5%	1/10W
R169	1-216-295-00	METAL CHIP	0	5%	1/10W
R170	1-216-075-00	METAL CHIP	12K	5%	1/10W
R172	1-216-295-00	METAL CHIP	0	5%	1/10W
R176	1-216-295-00	METAL CHIP	0	5%	1/10W
R178	1-216-035-00	METAL CHIP	270	5%	1/10W
R179	1-216-039-00	METAL CHIP	390	5%	1/10W
R181	1-216-073-00	METAL CHIP	10K	5%	1/10W
R182	1-216-041-00	METAL CHIP	470	5%	1/10W
R183	1-216-049-00	METAL CHIP	1K	5%	1/10W
R184	1-216-049-00	METAL CHIP	1K	5%	1/10W
R185	1-216-049-00	METAL CHIP	1K	5%	1/10W
R186	1-216-073-00	METAL CHIP	10K	5%	1/10W
R187	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R188	1-216-041-00	METAL CHIP	470	5%	1/10W
R196	1-216-041-00	METAL CHIP	470	5%	1/10W
R197	1-216-073-00	METAL CHIP	10K	5%	1/10W
R198	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R199	1-216-035-00	METAL CHIP	270	5%	1/10W
R203	1-216-049-00	METAL CHIP	1K	5%	1/10W
R204	1-216-043-00	METAL CHIP	560	5%	1/10W
R205	1-216-049-00	METAL CHIP	1K	5%	1/10W
R209	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R210	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R211	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R212	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R213	1-216-039-00	METAL CHIP	390	5%	1/10W
R214	1-216-033-00	METAL CHIP	220	5%	1/10W
R215	1-216-041-00	METAL CHIP	470	5%	1/10W
R216	1-216-039-00	METAL CHIP	390	5%	1/10W
R217	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R218	1-216-041-00	METAL CHIP	470	5%	1/10W
R219	1-216-039-00	METAL CHIP	390	5%	1/10W
R220	1-216-041-00	METAL CHIP	470	5%	1/10W
R221	1-216-047-00	METAL CHIP	820	5%	1/10W
R222	1-216-047-00	METAL CHIP	820	5%	1/10W
R223	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R224	1-216-039-00	METAL CHIP	390	5%	1/10W
R228	1-216-049-00	METAL CHIP	1K	5%	1/10W
R229	1-216-073-00	METAL CHIP	10K	5%	1/10W
R230	1-216-073-00	METAL CHIP	10K	5%	1/10W
R240	1-216-079-00	METAL CHIP	18K	5%	1/10W
R245	1-216-295-00	METAL CHIP	0	5%	1/10W
R250	1-216-085-00	METAL CHIP	33K	5%	1/10W
R251	1-216-085-00	METAL CHIP	33K	5%	1/10W
R252	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R253	1-216-047-00	METAL CHIP	820	5%	1/10W
R254	1-216-065-00	METAL CHIP	4.7K	5%	1/10W

VA-79

Ref. No.	Part No.	Description			Remark
R255	1-216-046-00	METAL CHIP	750	5%	1/10W
R256	1-216-047-00	METAL CHIP	820	5%	1/10W
R257	1-216-073-00	METAL CHIP	10K	5%	1/10W
R258	1-216-047-00	METAL CHIP	820	5%	1/10W
R259	1-216-073-00	METAL CHIP	10K	5%	1/10W
R260	1-216-039-00	METAL CHIP	390	5%	1/10W
R261	1-216-035-00	METAL CHIP	270	5%	1/10W
R262	1-216-075-00	METAL CHIP	12K	5%	1/10W
R263	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R264	1-216-085-00	METAL CHIP	33K	5%	1/10W
R265	1-216-073-00	METAL CHIP	10K	5%	1/10W
R266	1-216-041-00	METAL CHIP	470	5%	1/10W
R267	1-216-041-00	METAL CHIP	470	5%	1/10W
R268	1-216-035-00	METAL CHIP	270	5%	1/10W
R269	1-216-041-00	METAL CHIP	470	5%	1/10W
R270	1-216-049-00	METAL CHIP	1K	5%	1/10W
R271	1-216-073-00	METAL CHIP	10K	5%	1/10W
R272	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R273	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R274	1-216-073-00	METAL CHIP	10K	5%	1/10W
R275	1-216-077-00	METAL CHIP	15K	5%	1/10W
R277	1-216-073-00	METAL CHIP	10K	5%	1/10W
R280	1-216-047-00	METAL CHIP	820	5%	1/10W
R290	1-216-049-00	METAL CHIP	1K	5%	1/10W
R296	1-216-091-00	METAL CHIP	56K	5%	1/10W
R301	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R302	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R303	1-216-045-00	METAL CHIP	680	5%	1/10W
R304	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R305	1-216-047-00	METAL CHIP	820	5%	1/10W
R306	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R311	1-216-073-00	METAL CHIP	10K	5%	1/10W
R315	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R318	1-216-699-11	METAL CHIP	100K	0.5%	1/10W
R319	1-216-049-00	METAL CHIP	1K	5%	1/10W
R321	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R322	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R323	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R324	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R325	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R326	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R327	1-216-041-00	METAL CHIP	470	5%	1/10W
R330	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R334	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R336	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R339	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R342	1-216-295-00	METAL CHIP	0	5%	1/10W
R343	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R344	1-216-049-00	METAL CHIP	1K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R350	1-216-081-00	METAL CHIP	22K	5%	1/10W
R351	1-216-081-00	METAL CHIP	22K	5%	1/10W
R352	1-216-045-00	METAL CHIP	680	5%	1/10W
R353	1-216-045-00	METAL CHIP	680	5%	1/10W
R354	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R355	1-216-041-00	METAL CHIP	470	5%	1/10W
R356	1-216-041-00	METAL CHIP	470	5%	1/10W
R357	1-216-041-00	METAL CHIP	470	5%	1/10W
R358	1-216-049-00	METAL CHIP	1K	5%	1/10W
R401	1-216-041-00	METAL CHIP	470	5%	1/10W
R402	1-216-041-00	METAL CHIP	470	5%	1/10W
R405	1-216-295-00	METAL CHIP	0	5%	1/10W
R406	1-216-295-00	METAL CHIP	0	5%	1/10W
R408	1-216-041-00	METAL CHIP	470	5%	1/10W
R409	1-216-041-00	METAL CHIP	470	5%	1/10W
R410	1-216-081-00	METAL CHIP	22K	5%	1/10W
R411	1-216-081-00	METAL CHIP	22K	5%	1/10W
R412	1-216-049-00	METAL CHIP	1K	5%	1/10W
R413	1-216-045-00	METAL CHIP	680	5%	1/10W
R414	1-216-037-00	METAL CHIP	330	5%	1/10W
R415	1-216-049-00	METAL CHIP	1K	5%	1/10W
R416	1-216-047-00	METAL CHIP	820	5%	1/10W
R417	1-216-025-00	METAL CHIP	100	5%	1/10W
R418	1-216-033-00	METAL CHIP	220	5%	1/10W
R419	1-216-033-00	METAL CHIP	220	5%	1/10W
R422	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R425	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R426	1-216-039-00	METAL CHIP	390	5%	1/10W
R427	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R428	1-216-089-00	METAL CHIP	47K	5%	1/10W
R431	1-216-049-00	METAL CHIP	1K	5%	1/10W
R432	1-216-049-00	METAL CHIP	1K	5%	1/10W
R433	1-216-049-00	METAL CHIP	1K	5%	1/10W
R434	1-216-049-00	METAL CHIP	1K	5%	1/10W
R437	1-216-295-00	METAL CHIP	0	5%	1/10W
R449	1-216-073-00	METAL CHIP	10K	5%	1/10W
R450	1-216-073-00	METAL CHIP	10K	5%	1/10W
R451	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R452	1-216-027-00	METAL CHIP	120	5%	1/10W
R453	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R454	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R455	1-216-049-00	METAL CHIP	1K	5%	1/10W
R456	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R457	1-216-049-00	METAL CHIP	1K	5%	1/10W
R458	1-216-043-00	METAL CHIP	560	5%	1/10W
R459	1-216-043-00	METAL CHIP	560	5%	1/10W
R460	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R461	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R462	1-216-081-00	METAL CHIP	22K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R463	1-216-025-00	METAL CHIP	100	5%	1/10W
R464	1-216-049-00	METAL CHIP	1K	5%	1/10W
R465	1-216-081-00	METAL CHIP	22K	5%	1/10W
R466	1-216-081-00	METAL CHIP	22K	5%	1/10W
R467	1-216-295-00	METAL CHIP	0	5%	1/10W
R468	1-216-295-00	METAL CHIP	0	5%	1/10W
R469	1-216-043-00	METAL CHIP	560	5%	1/10W
R471	1-216-049-00	METAL CHIP	1K	5%	1/10W
R472	1-216-085-00	METAL CHIP	33K	5%	1/10W
R473	1-216-081-00	METAL CHIP	22K	5%	1/10W
R474	1-216-077-00	METAL CHIP	15K	5%	1/10W
R475	1-216-085-00	METAL CHIP	33K	5%	1/10W
R476	1-216-043-00	METAL CHIP	560	5%	1/10W
R477	1-216-039-00	METAL CHIP	390	5%	1/10W
R478	1-216-041-00	METAL CHIP	470	5%	1/10W
R479	1-216-049-00	METAL CHIP	1K	5%	1/10W
R480	1-216-049-00	METAL CHIP	1K	5%	1/10W
R482	1-216-073-00	METAL CHIP	10K	5%	1/10W
R483	1-216-073-00	METAL CHIP	10K	5%	1/10W
R484	1-216-041-00	METAL CHIP	470	5%	1/10W
R485	1-216-029-00	METAL CHIP	150	5%	1/10W
R486	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R488	1-216-049-00	METAL CHIP	1K	5%	1/10W
R489	1-216-045-00	METAL CHIP	680	5%	1/10W
R490	1-216-027-00	METAL CHIP	120	5%	1/10W
R491	1-216-081-00	METAL CHIP	22K	5%	1/10W
R492	1-216-073-00	METAL CHIP	10K	5%	1/10W
R493	1-216-037-00	METAL CHIP	330	5%	1/10W
R494	1-216-041-00	METAL CHIP	470	5%	1/10W
R495	1-216-041-00	METAL CHIP	470	5%	1/10W
R496	1-216-037-00	METAL CHIP	330	5%	1/10W
R497	1-216-039-00	METAL CHIP	390	5%	1/10W
R498	1-216-049-00	METAL CHIP	1K	5%	1/10W
R501	1-216-049-00	METAL CHIP	1K	5%	1/10W
R502	1-216-073-00	METAL CHIP	10K	5%	1/10W
R503	1-216-073-00	METAL CHIP	10K	5%	1/10W
R504	1-216-041-00	METAL CHIP	470	5%	1/10W
R505	1-216-049-00	METAL CHIP	1K	5%	1/10W
R506	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R507	1-216-073-00	METAL CHIP	10K	5%	1/10W
R508	1-216-077-00	METAL CHIP	15K	5%	1/10W
R509	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R510	1-216-049-00	METAL CHIP	1K	5%	1/10W
R513	1-216-047-00	METAL CHIP	820	5%	1/10W
R514	1-216-047-00	METAL CHIP	820	5%	1/10W
R515	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R516	1-216-045-00	METAL CHIP	680	5%	1/10W
R520	1-216-295-00	METAL CHIP	0	5%	1/10W
R522	1-216-295-00	METAL CHIP	0	5%	1/10W
R523	1-216-295-00	METAL CHIP	0	5%	1/10W
R524	1-216-295-00	METAL CHIP	0	5%	1/10W
R526	1-216-295-00	METAL CHIP	0	5%	1/10W
R529	1-216-295-00	METAL CHIP	0	5%	1/10W
R530	1-216-295-00	METAL CHIP	0	5%	1/10W
R531	1-216-089-00	METAL CHIP	47K	5%	1/10W
R532	1-216-073-00	METAL CHIP	10K	5%	1/10W
R538	1-216-295-00	METAL CHIP	0	5%	1/10W
R543	1-216-089-00	METAL CHIP	47K	5%	1/10W
R545	1-216-089-00	METAL CHIP	47K	5%	1/10W
R546	1-216-049-00	METAL CHIP	1K	5%	1/10W
R547	1-216-049-00	METAL CHIP	1K	5%	1/10W
R548	1-216-049-00	METAL CHIP	1K	5%	1/10W
R550	1-216-049-00	METAL CHIP	1K	5%	1/10W
R551	1-216-049-00	METAL CHIP	1K	5%	1/10W
R552	1-216-049-00	METAL CHIP	1K	5%	1/10W
R553	1-216-049-00	METAL CHIP	1K	5%	1/10W
R555	1-216-060-00	METAL GLAZE	3K	5%	1/10W
R612	1-216-295-00	METAL CHIP	0	5%	1/10W
R627	1-216-049-00	METAL CHIP	1K	5%	1/10W
R628	1-216-073-00	METAL CHIP	10K	5%	1/10W
R629	1-216-085-00	METAL CHIP	33K	5%	1/10W
R650	1-216-033-00	METAL CHIP	220	5%	1/10W
R660	1-216-295-00	METAL CHIP	0	5%	1/10W
R662	1-216-041-00	METAL CHIP	470	5%	1/10W
R666	1-216-041-00	METAL CHIP	470	5%	1/10W
R670	1-216-049-00	METAL CHIP	1K	5%	1/10W
R671	1-216-049-00	METAL CHIP	1K	5%	1/10W
R673	1-216-073-00	METAL CHIP	10K	5%	1/10W
R674	1-216-041-00	METAL CHIP	470	5%	1/10W
R701	1-216-295-00	METAL CHIP	0	5%	1/10W
R710	1-216-049-00	METAL CHIP	1K	5%	1/10W
R712	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R713	1-216-043-00	METAL CHIP	560	5%	1/10W
R714	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R729	1-216-049-00	METAL CHIP	1K	5%	1/10W
R730	1-216-295-00	METAL CHIP	0	5%	1/10W
R731	1-216-049-00	METAL CHIP	1K	5%	1/10W
R751	1-216-073-00	METAL CHIP	10K	5%	1/10W
R752	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R753	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R754	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R755	1-216-097-00	METAL CHIP	100K	5%	1/10W
R756	1-216-097-00	METAL CHIP	100K	5%	1/10W
R757	1-216-097-00	METAL CHIP	100K	5%	1/10W
R758	1-216-049-00	METAL CHIP	1K	5%	1/10W
R759	1-216-049-00	METAL CHIP	1K	5%	1/10W
R761	1-216-097-00	METAL CHIP	100K	5%	1/10W
R762	1-216-065-00	METAL CHIP	4.7K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R763	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R764	1-216-699-11	METAL CHIP	100K	0.5%	1/10W
R765	1-216-049-00	METAL CHIP	1K	5%	1/10W
R766	1-216-049-00	METAL CHIP	1K	5%	1/10W
R767	1-216-085-00	METAL CHIP	33K	5%	1/10W
R768	1-216-081-00	METAL CHIP	22K	5%	1/10W
R769	1-216-041-00	METAL CHIP	470	5%	1/10W
R770	1-216-049-00	METAL CHIP	1K	5%	1/10W
R771	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R772	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R773	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R774	1-216-073-00	METAL CHIP	10K	5%	1/10W
R775	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R801	1-216-121-00	METAL CHIP	1M	5%	1/10W
R802	1-216-295-00	METAL CHIP	0	5%	1/10W
R803	1-216-095-00	METAL CHIP	82K	5%	1/10W
R804	1-216-027-00	METAL CHIP	120	5%	1/10W
R806	1-216-121-00	METAL CHIP	1M	5%	1/10W
R807	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R818	1-216-295-00	METAL CHIP	0	5%	1/10W
R821	1-216-095-00	METAL CHIP	82K	5%	1/10W
R822	1-216-027-00	METAL CHIP	120	5%	1/10W
R823	1-216-295-00	METAL CHIP	0	5%	1/10W
R826	1-216-295-00	METAL CHIP	0	5%	1/10W
R830	1-216-085-00	METAL CHIP	33K	5%	1/10W
R831	1-216-091-00	METAL CHIP	56K	5%	1/10W
R832	1-216-041-00	METAL CHIP	470	5%	1/10W
R833	1-216-049-00	METAL CHIP	1K	5%	1/10W
R834	1-216-049-00	METAL CHIP	1K	5%	1/10W
R835	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R836	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R837	1-216-041-00	METAL CHIP	470	5%	1/10W
R838	1-216-041-00	METAL CHIP	470	5%	1/10W
R839	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R840	1-216-085-00	METAL CHIP	33K	5%	1/10W
R841	1-216-091-00	METAL CHIP	56K	5%	1/10W
R842	1-216-041-00	METAL CHIP	470	5%	1/10W
R843	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R844	1-216-049-00	METAL CHIP	1K	5%	1/10W
R845	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R846	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R847	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R848	1-216-031-00	METAL CHIP	180	5%	1/10W
R851	1-216-295-00	METAL CHIP	0	5%	1/10W
R876	1-216-295-00	METAL CHIP	0	5%	1/10W
R878	1-216-295-00	METAL CHIP	0	5%	1/10W
R901	1-216-073-00	METAL CHIP	10K	5%	1/10W
R902	1-216-067-00	METAL CHIP	5.6K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R903	1-216-295-00	METAL CHIP	0	5%	1/10W (EV-C770E)
R905	1-216-089-00	METAL CHIP	47K	5%	1/10W
R907	1-216-121-00	METAL CHIP	1M	5%	1/10W
R908	1-216-075-00	METAL CHIP	12K	5%	1/10W
R909	1-216-089-00	METAL CHIP	47K	5%	1/10W
R911	1-216-089-00	METAL CHIP	47K	5%	1/10W
R912	1-216-105-00	METAL CHIP	220K	5%	1/10W
R914	1-216-295-00	METAL CHIP	0	5%	1/10W
R915	1-216-073-00	METAL CHIP	10K	5%	1/10W
R916	1-216-073-00	METAL CHIP	10K	5%	1/10W
R917	1-216-049-00	METAL CHIP	1K	5%	1/10W
R919	1-216-083-00	METAL CHIP	27K	5%	1/10W
R920	1-216-073-00	METAL CHIP	10K	5%	1/10W
R923	1-216-073-00	METAL CHIP	10K	5%	1/10W
R924	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R925	1-216-077-00	METAL CHIP	15K	5%	1/10W
R926	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R927	1-216-295-00	METAL CHIP	0	5%	1/10W
R928	1-216-097-00	METAL CHIP	100K	5%	1/10W
R929	1-216-085-00	METAL CHIP	33K	5%	1/10W
R930	1-216-295-00	METAL CHIP	0	5%	1/10W
R932	1-216-077-00	METAL CHIP	15K	5%	1/10W
R933	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R934	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R935	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R936	1-216-081-00	METAL CHIP	22K	5%	1/10W
R937	1-216-079-00	METAL CHIP	18K	5%	1/10W
R938	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R939	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R940	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R941	1-216-073-00	METAL CHIP	10K	5%	1/10W
R942	1-216-073-00	METAL CHIP	10K	5%	1/10W
R943	1-216-041-00	METAL CHIP	470	5%	1/10W
R944	1-216-047-00	METAL CHIP	820	5%	1/10W
R945	1-216-049-00	METAL CHIP	1K	5%	1/10W
R946	1-216-073-00	METAL CHIP	10K	5%	1/10W
R947	1-216-049-00	METAL CHIP	1K	5%	1/10W
R948	1-216-049-00	METAL CHIP	1K	5%	1/10W
R949	1-216-049-00	METAL CHIP	1K	5%	1/10W
R950	1-216-049-00	METAL CHIP	1K	5%	1/10W
R951	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R952	1-216-073-00	METAL CHIP	10K	5%	1/10W
R953	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R954	1-216-073-00	METAL CHIP	10K	5%	1/10W
R955	1-216-073-00	METAL CHIP	10K	5%	1/10W
R957	1-216-047-00	METAL CHIP	820	5%	1/10W
R958	1-216-081-00	METAL CHIP	22K	5%	1/10W
R959	1-216-081-00	METAL CHIP	22K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R960	1-216-049-00	METAL CHIP	1K	5%	1/10W
R961	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R962	1-216-049-00	METAL CHIP	1K	5%	1/10W
R964	1-216-295-00	METAL CHIP	0	5%	1/10W
R965	1-216-295-00	METAL CHIP	0	5%	1/10W
R967	1-216-295-00	METAL CHIP	0	5%	1/10W
R969	1-216-295-00	METAL CHIP	0	5%	1/10W
R970	1-216-077-00	METAL CHIP	15K	5%	1/10W
R971	1-216-049-00	METAL CHIP	1K	5%	1/10W
R972	1-216-077-00	METAL CHIP	15K	5%	1/10W
R973	1-216-073-00	METAL CHIP	10K	5%	1/10W
R974	1-216-073-00	METAL CHIP	10K	5%	1/10W
R975	1-216-097-00	METAL CHIP	100K	5%	1/10W
R976	1-216-097-00	METAL CHIP	100K	5%	1/10W
R977	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R979	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R980	1-216-083-00	METAL CHIP	27K	5%	1/10W
R983	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R984	1-216-073-00	METAL CHIP	10K	5%	1/10W
		< VARIABLE RESISTOR >			
RV101	1-238-858-11	RES, ADJ, CERMET 47K			
RV102	1-238-855-11	RES, ADJ, CERMET 4.7K			
RV103	1-238-855-11	RES, ADJ, CERMET 4.7K			
RV104	1-238-857-11	RES, ADJ, CERMET 22K			
RV105	1-238-855-11	RES, ADJ, CERMET 4.7K			
RV106	1-238-857-11	RES, ADJ, CERMET 22K			
RV108	1-238-858-11	RES, ADJ, CERMET 47K			
RV109	1-238-854-11	RES, ADJ, CERMET 2.2K			
RV110	1-238-853-11	RES, ADJ, CERMET 1K			
RV111	1-238-853-11	RES, ADJ, CERMET 1K			
RV250	1-238-854-11	RES, ADJ, CERMET 2.2K			
RV251	1-238-854-11	RES, ADJ, CERMET 2.2K			
RV501	1-238-854-11	RES, ADJ, CERMET 2.2K			
RV502	1-238-853-11	RES, ADJ, CERMET 1K			
RV503	1-237-722-11	RES, ADJ, CARBON 2.2K			
RV504	1-237-722-11	RES, ADJ, CARBON 2.2K			
RV751	1-238-855-11	RES, ADJ, CERMET 4.7K			
RV752	1-238-856-11	RES, ADJ, CERMET 10K			
RV801	1-238-852-11	RES, ADJ, CERMET 470			
RV901	1-238-857-11	RES, ADJ, CERMET 22K			
RV902	1-238-857-11	RES, ADJ, CERMET 22K			
		< VIBRATOR >			
X301	1-577-117-11	VIBRATOR, CRYSTAL (4.43MHz)			

****

Ref. No.	Part No.	Description			Remark
*	A-7063-517-A	VP-36 BOARD, COMPLETE (EV-S880E ONLY) (Ref. No7,000 series)			
		**********			
		< CAPACITOR >			
C101	1-163-035-00	CERAMIC CHIP	0.047uF	50V	
C102	1-128-004-11	ELECT CHIP	10uF	20% 16V	
C103	1-163-035-00	CERAMIC CHIP	0.047uF	50V	
C104	1-163-239-11	CERAMIC CHIP	33PF	5% 50V	
C105	1-163-239-11	CERAMIC CHIP	33PF	5% 50V	
C106	1-163-989-11	CERAMIC CHIP	0.033uF	10% 25V	
C107	1-163-035-00	CERAMIC CHIP	0.047uF	50V	
C108	1-163-077-00	CERAMIC CHIP	0.1uF	10% 25V	
C109	1-128-004-11	ELECT CHIP	10uF	20% 16V	
		< FILTER >			
CF101	1-567-192-11	OSCILLATOR, CERAMIC (4.00MHz)			
		< CONNECTOR >			
CN101	1-563-311-11	CONNECTOR, BOARD TO BOARD 10P			
		< IC >			
IC101	8-759-147-30	IC uPD75004-GB-562-3B4			
IC102	8-759-030-60	IC SDA5642			
		< COIL >			
L101	1-410-393-11	INDUCTOR CHIP	100uH		
		< RESISTOR >			
R101	1-216-089-00	METAL CHIP	47K	5% 1/10W	
R102	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R103	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R104	1-216-089-00	METAL CHIP	47K	5% 1/10W	
R106	1-216-121-00	METAL CHIP	1M	5% 1/10W	
R107	1-216-119-00	METAL CHIP	820K	5% 1/10W	
R108	1-216-097-00	METAL CHIP	100K	5% 1/10W	
R109	1-216-066-00	METAL CHIP	5.1K	5% 1/10W	
R110	1-216-119-00	METAL CHIP	820K	5% 1/10W	
R111	1-216-025-00	METAL CHIP	100	5% 1/10W	
R112	1-216-295-00	METAL CHIP	0	5% 1/10W	
R113	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R114	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R115	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R116	1-216-049-00	METAL CHIP	1K	5% 1/10W	
R117	1-216-049-00	METAL CHIP	1K	5% 1/10W	

****

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
10	1-466-714-41	SWITCH BLOCK, CONTROL (EV-S880E)	
⚠101	1-540-054-11	INLET, AC	
116	1-691-813-11	CABLE, FLAT	
118	1-691-814-11	CABLE, FALT	
121	1-569-347-11	CONNECTOR, FPC(TRANSLATION) 13P	
126	1-569-346-11	CONNECTOR, FPC(TRANSLATION) 10P	
⚠151	1-466-328-31	MODULATOR, RF (RFU-2027) (EV-S880E)	
152	1-555-110-00	CABLE, PIN (EV-S880E)	
261	1-691-812-11	CABLE, FLAT	
M901	A-7048-671-A	DRUM ASSY (DGU-0A4A-R)	
M902	8-835-331-01	MOTOR, DC U-22A (CAPSTAN)	
M903	A-7040-324-A	MOTOR ASSY (N), THREADING (LOADING)	
M904	X-3731-108-1	FL MOTOR ASSY	
**********			
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-467-001-11	REMOTE COMMANDER (RMT-V134) (EV-S880E)	
	1-467-002-11	REMOTE COMMANDER (RMT-V130H) (EV-C770E)	
⚠	1-574-056-11	CORD, POWER	
	1-575-334-11	CORD (WITH CONNECTOR) (AV CABLE)	
	1-575-335-21	CORD, CONNECTION (S VIDEO CONNECTION CABLE)	
	1-690-935-11	CORD, CONNECTION (CONTROL L(LANC) CABLE)	
	1-696-593-11	CORD, CONNECTION (PAL) (COAXIAL (RF) CABLE) (EV-S880E)	
*	3-677-503-00	SHEET, PROTECTION	
	3-695-308-01	DRIVER, VOLUME (EV-S880E)	
	3-756-500-11	MANUAL, INSTRUCTION (ENGLISH) (EV-S880E)	
	3-756-500-41	MANUAL, INSTRUCTION (GERMAN, FRENCH) (EV-S880E)	
	3-756-500-51	MANUAL, INSTRUCTION (DUTCH, ITALIAN) (EV-S880E)	
	3-756-749-11	MANUAL, INSTRUCTION (ENGLISH) (EV-C770E)	
	3-756-749-41	MANUAL, INSTRUCTION (GERMAN, FRENCH, SPANISH) (EV-C770E)	
	3-756-749-51	MANUAL, INSTRUCTION (DUTCH, ITALIAN, SWEDISH) (EV-C770E)	
*	3-947-341-01	CUSHION (UPPER)	
*	3-947-342-01	CUSHION (LOWER)	
*	3-950-092-11	INDIVIDUAL CARTON (EV-S880E)	
*	3-950-092-21	INDIVIDUAL CARTON (EV-C770E)	
**********			

Ref. No.	Part No.	Description	Remark
		**********	
		HARDWARE LIST	
		**********	
#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
#2	7-685-782-01	SCREW +PTT 2X5 (S)	
#3	7-627-553-37	SCREW (M2X3), SPECIAL HEAD	
#4	7-627-553-68	SCREW, PRECISION +P 2X6 TYPE3	
#5	7-628-253-40	SCREW +PS 2X10	
#6	7-627-555-88	SCREW (M1.4X1.8)	
#7	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

SECTION 8
SERVICE MODE

☆This unit uses the EVR (Electronic Variable Resistor) for performing adjustments and tests. These functions are implemented by the SENSER LANC system.

8-1. SENSER LANC

SENSER LANC is the LANC format designed to perform EVR (electronic variable resistor) adjustments and various tests for this 8mm VTR by using the LANC (Control L). The SENSER LANC is synonymous with the old SERVICE LANC. But there have been enhancements and the SENSER LANC is now used as a unified word.

8-2. HOW TO USE THE RM-95 JIG (ADJUSTMENT REMOTE CONTROL)

The RM-95 jig is used to operate the SENSER LANC. This jig will create the SENSER LANC Mode. Because of this, the HOLD switch has been modified for service purpose.

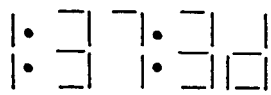
Note that the old models of the RM-95 have no page display function and it is needed to replace their microcomputers within these old models.

Old	UPD7503G-A71-12 UPD7503G-C23-12	8-759-142-56 8-759-146-77	No Page display (The microcomputer must be replaced.)
New	UPD7503G-C56-12	8-759-148-35	Page display

LCD Display of RM-95

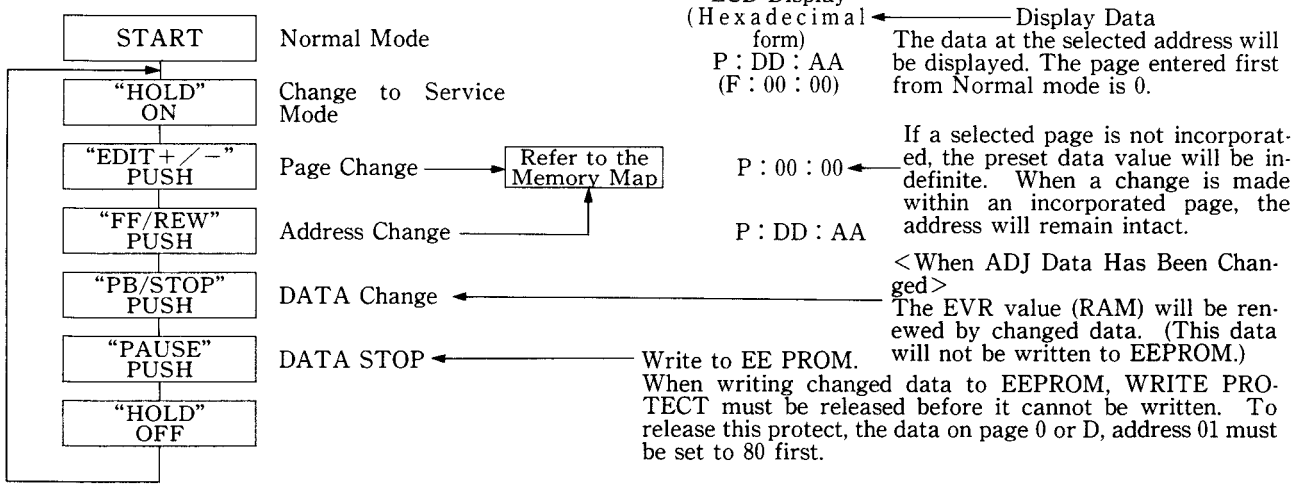
Page Data Address

Example



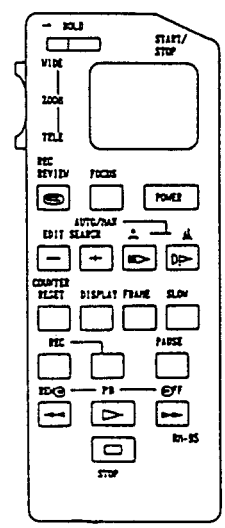
This means that the data on page 1, address 3D is 37.

8-3. HOW TO CHANGE THE SERVICE MODE WITH RM-95

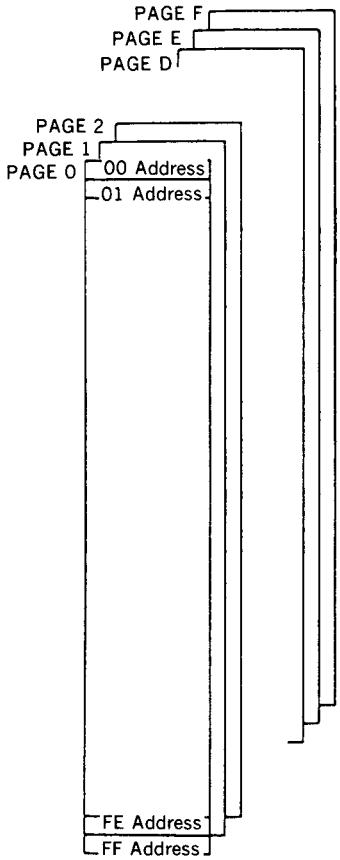


Command	Action	RM-95 Control Button Pushed
Page Up	Page+1	Edit Search+
Page Down	Page−1	Edit Search−
Direct Page Set	Sets to specified page.	Event Clear
Address Up	Address+1	Fast Forward
Address Down	Address−1	Rewind
Data Up	Data+1	Play Back
Data Down	Data−1	Stop
Store	Writes data to EEPROM. RAM	Pause

RM-95 (J-6082-053-B)



8-4. SENSER LANC MEMORY MAP



This unit has pages 0 to F allocated as listed below.

PAGE	Page Allocation
0	Service
1	
2	System Control Micro computer
3	
4	
5	
6	
7	T/T Control Micro computer
8	
9	
A	
B	
C	
D	VTR EE-PROM
E	
F	

8-5. EEPROM WRITE PROTECT

EEPROM Write Protect is released and established as follows:

Page 0 or D	Address 01

Data	Function
00	Normal (Write Protected)
80	Write Protect Release

Note 1 : Address : 01 of page : 0 and address : 01 of page : D have same function.

Note 2 : After completing necessary adjustments/repairs, be sure to return the data at this address to 00.

8-6. TEST MODE SETTING

Variety of test modes are established and changed as listed below. Before setting data, Write Protect should be released by setting as follows:
(page: 0, address: 01, data: 80)

Page 0 or D	Address 02

Data	Function
00	Normal
01	Test Mode 1 (EMG OFF +SP/LP no distinguished) Various Emergencies, Inhibit and Release Drum, Capstan, Loading Motor, Reel, Tape Top and End, DEW SP/LP Automatic Discrimination Inhibit, Manual Changeover
02	Test Mode 2 (Riar Lock +SP/LP no distinguished) With the ATF servo shifted one track, playback tape and allow taking RF on 1 channel. (This is valid only in playback mode.) SP/LP is protected from being distinguished and REC SP/LP followed.
03	Test Mode 3 (Track Shift +SP/LP no distinguished) • With a forward shift of 1/3 to 1/4 track, playback tape. (This is valid only in playback mode.) SP/LP is protected from being distinguished and REC SP/LP is followed.

Note 1 : Address : 02 of page : 0 and adress : 02 of page : D have same functions.

Note 2 : After completing necessary adjustments/repairs, be sure to return the data at this address to 00.

8-7. EMERGENCY CODES

These codes can be used to check the condition of failure (abnormality) that occurred.

Page 0 or D	Address 06

First Emergency Code
....The code of the first failure that occurred.

Page 0 or D	Address 07

Last Emergency Code
....The code of the last failure that occurred (This data will be renewed each time a failure occurs.

Note 1 : Address 06 and address 07 on page 0 have the same functions as address 06 and address 07 on page D respectively.

Note 2 : After completing necessary adjustments/repairs, be sure to rewrite the data at address 06 and the data at address 07 to 00.

Note 3 : When writing data, after setting the data, be sure to press the PAUSE button on the adjustment remote control.

Code	Condition of Failure
00	No Failure
01	Loading Motor Failure
02	Reel Failure during Unloading
03	Reel Failure during operation other than unloading
04	Capstan Failure
05	FG Failure at Start of Drum
06	PG no Failure at Start of Drum
07	FG Failure when Drum is Stationary
08	FG Failure at Start of Drum (on LOADING)
09	PG no Failure at Start of Drum (on LOADING)
0A	FG Failure when Drum is Stationary (on LOADING)
0B	FG Fairule at Start of Drum (on UNLOADING)
0C	PG no Fairule at Start of Drum (on UNLOADING)
0D	PG no Fairule when Drum Stationary (on UNLOADING)

8-8. EMERGENCY MODE

This mode allows you to check the mode of operation in which the VTR was placed when failure occurred.

Page 0 or D	Address 08

First Emergency Code

....The code of the first failure that occurred.

Page 0 or D	Address 09

Last Emergency Code

....The code of the last failure that occurred

(This data will be renewed each time a failure occurs.)

Note 1 : Address 08 and address 09 on page 0 have the same functions as address 08 and address 09 on page D respectively.

Note 2 : After completing necessary adjustments/repairs, be sure to rewrite the data at address 08 and the data at address 09 to 00.

Note 3 : When writing data, after setting the data, be sure to press the PAUSE button on the adjustment remote control.

Code	Condition of Failure
00	INITIAL
10	EJECTED
20	STOP
26	STOP TAPE END
27	STOP TAPE TOP
29	STOP ZERO
2E	STOP POWER OFF
30	FF
33	FF ZERO PB
34	FF ZERO STOP
38	REW
3A	REW PB
3B	REW ZERO PB
3C	REW ZERO STOP
40	REC
41	REC PAUSE
42	TIMER REC
43	TIMER REC PAUSE
48	A INSERT
49	A INSERT PAUSE
60	PB
62	+1
63	−1
64	CUE
65	REVIEW
66	+2
67	−2

Code	Condition of Failure
68	LOCKED CUE
69	LOCKED REVIEW
70	+STILL
71	−STILL
72	+SLOW, +SLOW 1/5
73	−SLOW, −SLOW 1/5
74	+SLOW 1/10
75	−SLOW 1/10
76	+FRAME
77	−FRAME
FF	NULL

8-9. T/T CONTROLLER TEST/ADJUSTMENT MODE

Page 7	Address 58

Data	Function
00	Normal
01	T/T switch test mode [Note 1)] When this mode is entered, T/T controller will not send information assigned to each key on the main unit to system controller. Then the code assigned to a pressed key can be viewed on adjustment remote control without any operation of the set.
03	T/T LED test mode [Note 1)] When this mode is entered, RAM for LED illumination will not be refreshed even if it is directly operated.
04	T/T CLOCK adjustment mode [Note 1)] When this mode is entered, presclaler board for T controller clock will be active (a beep will continue to sound).
80	T/T port check mode [Note 2)] When this mode is entered, T/T controller will release the port for SENSER LANC.

Note 1 : After the test/adjustment is completed, return to the normal mode (data 00) or press the CL switch to re-enter the normal mode.

Note 2 : After the test/adjustmen is completed, press the CL switch to re-enter the normal mode.

8-9-1. TEST OF USUAL KEYS

The usual keys can be tested by entering the T/T switch test mode (page : 7, address : 58, data : 01) and viewing the data on address : 73.

Page 7	Address 78

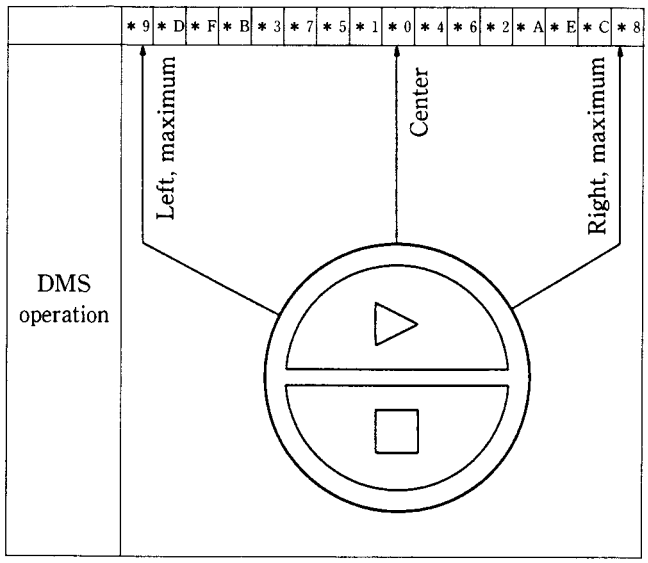
Key operation	EV-S880E	EV-C770E
No key touching	00	
POWER	01	
EJECT	02	
STOP	03	
PLAY	04	
PAUSE	06	
TIMER REC	09	—
INPUT SELECT	0A	
TAPE SPEED (SP/LP)	0B	
COUNTER RESET	0C	14
REC	0D	
TIMER CHECK	0E	—
QUICK TIMER	0F	—
VB (VOICE BOOST)	10	17
CHANNEL +	11	—
CHANNEL −	12	—
VPS	13	—
SYNCHRO EDIT	15	09
EDIT	16	0E
TV/VTR	17	—

Note : After the test is completed, return to the normal mode (page : 7, address : 58, data : 00) or press the CL switch to re-enter the normal mode.

8-9-2. TEST OF DMS

The DMS can be tested by entering the T/T switch test mode (page : 7, address : 58, data : 01) and viewing the data on address : 7D.

Page 7	Address 7D



* : 0~F

Note : After the test is completed, return to the normal mode (page : 7, address : 58, data : 00) or press the CL switch to re-enter the normal mode.

8-9-3. TEST OF REMOTE CONTROL MODE SWITCH

The Remote Control Mode switch can be tested be tested by entering the T/T switch test mode (page : 7, address : 58, data : 01) and viewing the data on address : 7F.

Page 7	Address 7F

Switch operation	
VTR1	* 1
VTR2	* 2
VTR3	* 3

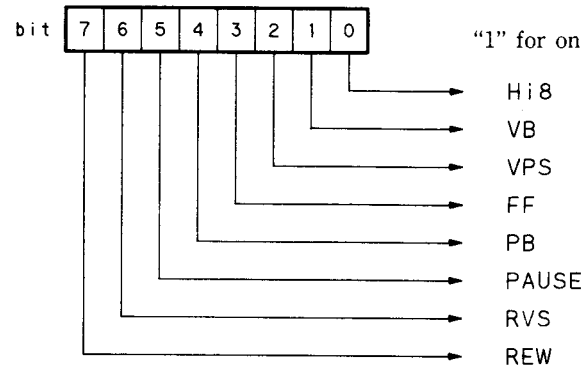
* : 0~F

Note : After the test is completed, return to the normal mode (page : 7, address : 58, data : 00) or press the CL switch to re-enter the normal mode.

8-9-4. ILLUMINATION TEST (1) OF LED

The LED display can be tested by entering the T/T LED test mode (page : 7, address : 58, data : 03) and changing the data on address : B6.

Page 7	Address B6

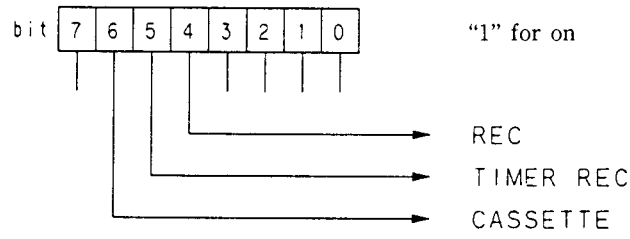


Note : After the test is completed, return to the normal mode (page : 7, address : 58, data 00) or press the CL switch to re-enter the normal mode.

8-9-5. ILLUMINATION TEST (2) OF LED

The LED display can be tested by entering the T/T port check mode (page : 7, address : 58, data : 80) and changing the data on address : 2D.

Page 7	Address 2D



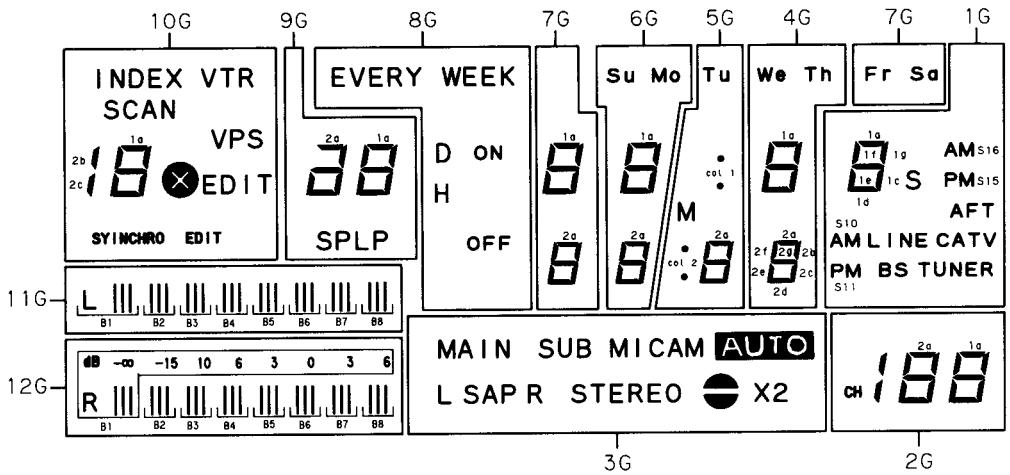
Note : After the test is completed, press the CL switch to return to the normal mode.

8-9-6. ILLUMINATION TEST OF FDP

The FDP display can be tested by entering the T/T port check mode (page: 7, address: 58, data: 80) and changing the data on addresses 40 to 57.

Page	Address	FDP lighting on portion
7	40	1G, S1-8
	41	1G, S9-16
	42	2G, S1-8
	43	2G, S9-16
	44	3G, S1-8
	45	3G, S9-16
	46	4G, S1-8
	47	4G, S9-16
	48	5G, S1-8
	49	5G, S9-16
	4A	6G, S1-8
	4B	6G, S9-16

Page	Address	FDP lighting on portion
	4C	7G, S1-8
	4D	7G, S9-16
	4E	8G, S1-8
	4F	8G, S9-16
	50	9G, S1-8
	51	9G, S9-16
	52	10G, S1-8
	53	10G, S9-16
	54	11G, S1-8
	55	11G, S9-16
	56	12G, S1-8
	57	12G, S9-16



	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
S1	1a	1a	D	1a	1a		1a		1a	1a
S2	1b	1b		1b	1b		1b		1b	1b
S3	1c	1c	H	1c	1c	M	1c		1c	1c
S4	1d	1d		1d	1d	col 2 • DOWN	1d	SAP	1d	1d
S5	1e	1e		1e	1e	• UP col 2	1e	L	1e	1e
S6	1f	1f		1f	1f	• DOWN col 1	1f		1f	1f
S7	1g	1g		1g	1g	col 1 • UP	1g		1g	1g
S8	SCAN	2a	OFF	2a	2a	2a	2a	R	2a	S
S9	VPS	2b		2b	2b	2b	2b	MAIN	2b	AFT
S10	EDIT	2c		2c	2c	2c	2c		2c	AM (DOWN)
S11	SYNCHRO EDIT	2d		2d	2d	2d	2d	X2	2d	PM (UP)
S12		2e		2e	2e	2e	2e	●	2e	BS TUNER
S13	262C	LP		2f	2f	2f	2f	SUB	2f	CATV
S14	⊗	2g		2g	2g	2g	2g	STEREO	2g	LINE
S15	INDEX		EVERY WEEK	Sa	Mo	Tu	Th	NICAM	CH	PM (UP)
S16	VTR	SP	ON	Fr	Su		We	AUTO		AM (DOWN)

8-10. 0 PAGE MEMORY MAP

Adjustment Address	Contents	Remarks
00	Not used	
01	EEPROM Control Code	
02	Test Mode	
03	Switching Position Adjustment (LOW)	
04	Switching Position Adjustment (HIGH)	
05	T/T ROM Version	
06	Emergency Code (FIRST)	
07	Emergency Code (LAST)	
08	Emergency Mode (FIRST)	
09	Emergency Mode (LAST)	
0A	TU H DET Out (OO or FF)	
0B		
0C		
0D		
0E		
0F		

8-11. D PAGE MEMORY MAP

Address	Function	Initial Value	Memo Column
00	Not used		
01	EEPROM		
02	Test Mode		
03	Switching Position Adjustment (LOW)	Adjustment	
04	Switching Position Adjustment (HIGH)	Adjustment	
05	T/T ROM Version		
06	Emergency Code (FIRST)	FF	
07	Emergency Code (LAST)	FF	
08	Emergency Mode (FIRST)	FF	
09	Emergency Mode (LAST)	FF	
0A	TU H DET Out (OO or FF)		
0B			
0C			
0D			
0E			
0F			
10	Serial Data Storage Area LOW MP LP	0A	
11	Serial Data Storage Area LOW MP SP	05	
12	Serial Data Storage Area LOW HG LP	06	
13	Serial Data Storage Area LOW HG SP	01	
14	Serial Data Storage Area LOW ME LP	06	
15	Serial Data Storage Area LOW ME SP	01	
16	Serial Data Storage Area HIGH HG LP	0B	
17	Serial Data Storage Area HIGH HG SP	0A	
18	Serial Data Storage Area HIGH ME LP	0A	
19	Serial Data Storage Area HIGH ME SP	01	
1A			
1B			
1C	SLOW TRACON DATA (LP)	Adjustment	
1D	SLOW TRACON DATA (SP)	Adjustment	
1E	−SLOW TRACON DATA (LP)	Adjustment	
1F	−SLOW TRACON DATA (SP)	Adjustment	
20	×2 TRACON (LP)	Adjustment	
21	×2 TRACON (SP)	Adjustment	
22	STILL ADJUST	E0~20	
23	Spare		
24	SHARPNESS	A6	
25	Spare		
26	Spare		
27	Spare		
28	Spare		
29	Spare		
2A	Spare		
2B	Spare		
2C	Emergency Code (FIRST)	FF	

Address	Function	Initial Value	Memo Column
2D	Emergency Code (LAST)	FF	
2E	Emergency Mode (FIRST)	FF	
2F	Emergency Mode (LAST)	FF	
30－3F	Not used		
40	Position 1 Channel	01	
41	Position 1 Offset	FF	
42	Position 2 Channel	02	
43	Position 2 Offset	FF	
44	Position 3 Channel	03	
45	Position 3 Offset	FF	
46	Position 4 Channel	04	
47	Position 4 Offset	FF	
48	Position 5 Channel	05	
49	Position 5 Offset	FF	
4A	Position 6 Channel	06	
4B	Position 6 Offset	FF	
4C	Position 7 Channel	07	
4D	Position 7 Offset	FF	
4E	Position 8 Channel	FF	
4F	Position 8 Offset	FF	
50	Position 9 Channel	FF	
51	Position 9 Offset	FF	
52	Position 10 Channel	FF	
53	Position 10 Offset	FF	
54	Position 11 Channel	FF	
55	Position 11 Offset	FF	
56	Position 12 Channel	FF	
57	Position 12 Offset	FF	
58	Position 13 Channel	FF	
59	Position 13 Offset	FF	
5A	Position 14 Channel	FF	
5B	Position 14 Offset	FF	
5C	Position 15 Channel	FF	
5D	Position 15 Offset	FF	
5E	Position 16 Channel	FF	
5F	Position 16 Offset	FF	
60	Position 17 Channel	FF	
61	Position 17 Offset	FF	
62	Position 18 Channel	FF	
63	Position 18 Offset	FF	
64	Position 19 Channel	FF	
65	Position 19 Offset	FF	
66	Position 20 Channel	FF	
67	Position 20 Offset	FF	
68	Position 21 Channel	FF	
69	Position 21 Offset	FF	
6A	Position 22 Channel	FF	
6B	Position 22 Offset	FF	

Address	Function	Initial Value	Memo Column
6C	Position 23 Channel	FF	
6D	Position 23 Offset	FF	
6E	Position 24 Channel	FF	
6F	Position 24 Offset	FF	
70	Position 25 Channel	FF	
71	Position 25 Offset	FF	
72	Position 26 Channel	FF	
73	Position 26 Offset	FF	
74	Position 27 Channel	FF	
75	Position 27 Offset	FF	
76	Position 28 Channel	FF	
77	Position 28 Offset	FF	
78	Position 29 Channel	FF	
79	Position 29 Offset	FF	
7A	Position 30 Channel	FF	
7B	Position 30 Offset	FF	
7C	Position 31 Channel	FF	
7D	Position 31 Offset	FF	
7E	Position 32 Channel	FF	
7F	Position 32 Offset	FF	
80	Position 33 Channel	FF	
81	Position 33 Offset	FF	
82	Position 34 Channel	FF	
83	Position 34 Offset	FF	
84	Position 35 Channel	FF	
85	Position 35 Offset	FF	
86	Position 36 Channel	FF	
87	Position 36 Offset	FF	
88	Position 37 Channel	FF	
89	Position 37 Offset	FF	
8A	Position 38 Channel	FF	
8B	Position 38 Offset	FF	
8C	Position 39 Channel	FF	
8D	Position 39 Offset	FF	
8E	Position 40 Channel	FF	
8F	Position 40 Offset	FF	
90	Position 41 Channel	FF	
91	Position 41 Offset	FF	
92	Position 42 Channel	FF	
93	Position 42 Offset	FF	
94	Position 43 Channel	FF	
95	Position 43 Offset	FF	
96	Position 44 Channel	FF	
97	Position 44 Offset	FF	
98	Position 45 Channel	FF	
99	Position 45 Offset	FF	
9A	Position 46 Channel	FF	
9B	Position 46 Offset	FF	

Address	Function	Initial Value	Memo Column
9C	Position 47 Channel	FF	
9D	Position 47 Offset	FF	
9E	Position 48 Channel	FF	
9F	Position 48 Offset	FF	
A0	Position 49 Channel	FF	
A1	Position 49 Offset	FF	
A2	Position 50 Channel	FF	
A3	Position 50 Offset	FF	
A4	Position 51 Channel	FF	
A5	Position 51 Offset	FF	
A6	Position 52 Channel	FF	
A7	Position 52 Offset	FF	
A8	Position 53 Channel	FF	
A9	Position 53 Offset	FF	
AA	Position 54 Channel	FF	
AB	Position 54 Offset	FF	
AC	Position 55 Channel	FF	
AD	Position 55 Offset	FF	
AE	Position 56 Channel	FF	
AF	Position 56 Offset	FF	
B0	Position 57 Channel	FF	
B1	Position 57 Offset	FF	
B2	Position 58 Channel	FF	
B3	Position 58 Offset	FF	
B4	Position 59 Channel	FF	
B5	Position 59 Offset	FF	
B6	Position 60 Channel	FF	
B7	Position 60 Offset	FF	
B8－DF	Spare		
E0	AFT Flag POS 1-7	FF	
E1	AFT Flag POS 8-15	FF	
E2	AFT Flag POS 16-23	FF	
E3	AFT Flag POS 24-31	FF	
E4	AFT Flag POS 32-39	FF	
E5	AFT Flag POS 40-47	FF	
E6	AFT Flag POS 48-55	FF	
E7	AFT Flag POS 56-60	FF	
E8	STOP Flag POS 1-7	7F	
E9	STOP Flag POS 8-15	00	
EA	STOP Flag POS 16-23	00	
EB	STOP Flag POS 24-31	00	
EC	STOP Flag POS 32-39	00	
ED	STOP Flag POS 40-47	00	
EE	STOP Flag POS 48-55	00	
EF	STOP Flag POS 55-60	00	

SECTION 9
MECHANICAL ADJUSTMENTS

For Mechanical Adjustments

For the procedures how to adjust and check the mechanism, as well as how to replace mechanical parts, refer to the separate 8mm Video Mechanical Adjustment Manual III (9-972-732-01).

However, for the procedures how to set the Track Shift mode, refer to the following text.

9-1. TAPE PASS ADJUSTMENT

〔TRACK SHIFT〕

The 8mm Video Tape Recorder system uses the AFT (Automatic Track Finding) function in which four different pilot signals are used for controlling the tape speed instantaneously to provide high precision tracking. This eliminates the Tracking Adjustment control, thus allowing accurate tracing.

In spite of its advantageous feature, the AFT system may have a difficulty in adjusting the tape pass system. The ATF will automatically corrects tracing even if the head has only a little tracing distortion. This may make it impossible to perform a complete adjustment.

Therefore, when performing a fine adjustment for tracking, the Track Shift mode should be entered before starting this adjustment. This mode will force to operate the ATF to shift the amount of tracking by a given quantity (approximately 1/4), so that tracking can be easily fine adjusted. Furthermore, no track shift jig is needed.

9-1-1. Setting the Track Shift Mode

1) Place the adjustment remote control RM-95 (J-6082-053-B) in the HOLD ON position.
2) Operate the EDIT+/— button to select adjustment page 0.
3) Operate the FF/REW button to select adjustment address 02.
4) Operate the PB/STOP button to set to adjustment data 03. (This will go to the Test Mode 3 (Pass Adjustment).)

Note 1 : For details of the Test Mode, refer to "SECTION 8. SERVICE MODE."

Note 2 : If the LP mode is recognized by the system wrongly, operate the Recording Time SP/LP button to enter the SP mode.

Note 3 : After adjustment, operate the PB/STOP button to reset to adjustment data 00. Place the remote control in the HOLD OFF position to return to the normal mode.

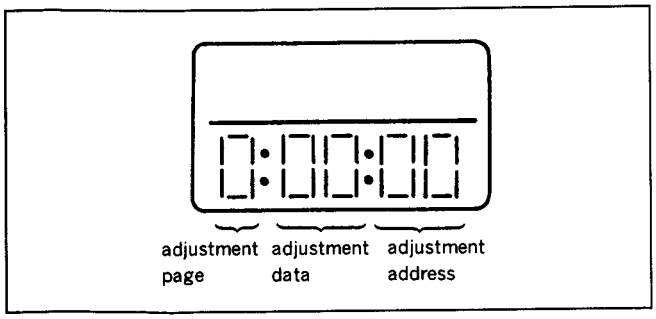


Fig. 9-1.

9-1-2. Preparation before Adjustment

1) Clean the surfaces over which tape moves past (of the tape guides, drum, capstan shaft and pinch rollers).
2) Oscilloscope Connection and Waveform Output:
   1 ch: Drum head's RF signal output, RP-160 board CN001 pin ③ (PB RF)
   External trigger input: RP-160 board CN001 pin ② (RF SWP)
   GND: RP-160 board CN001 pin ① (GND)
3) Play back alignment tape for tracking (WR5-1CP).
4) Check that RF waveform observed on the oscilloscope is flat on both entrance and exit sides.
   If not flat, perform necessary adjustment according to the separate 8 mm Video Mechanical Adjustment III.

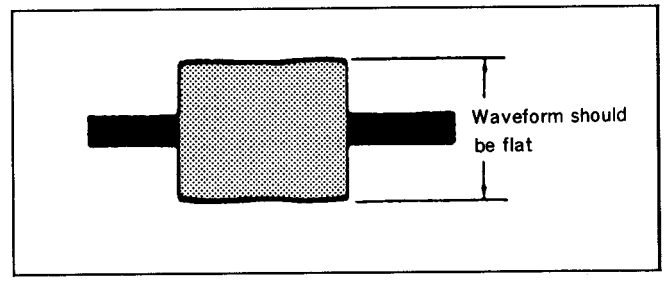


Fig. 9-2.

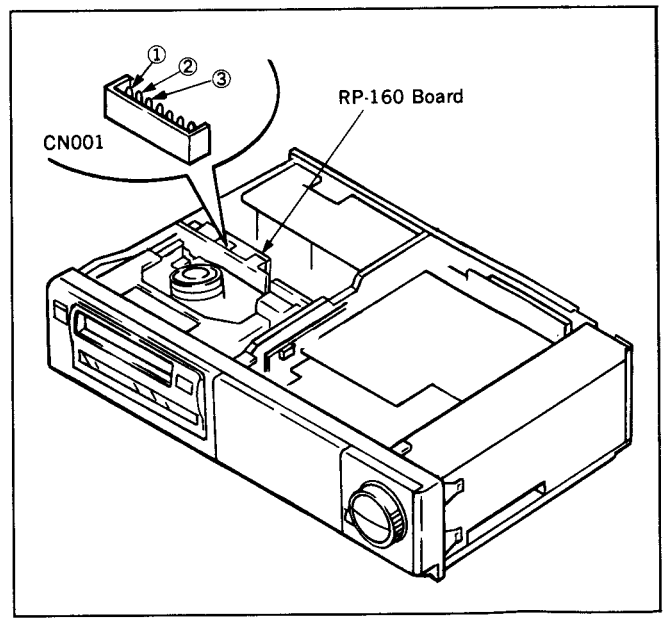


Fig. 9-3.

SECTION 10
ELECTRICAL ADJUSTMENTS

See the adjusting part location diagram from on page 240 for the adjustment.

For details of the SENSER LANC , refer to "SECTION 8. SERVICE MODE".

10-1. PREPARATION BEFORE ADJUSTMENT

10-1-1. Equipment Required

The measuring instruments used for this alignment include :

1) Monitor TV
2) Oscilloscope, dual-trace, bandwidth of 30MHz or more, with delay mode (A probe 10:1 should be used unless otherwise specified.)
3) Frequency counter
4) Pattern generator (with Video Output terminal; refer to Section 10-1-2. Equipment Connection.)
5) Digital voltmeter
6) Audio generator
7) Audio level meter
8) Audio distortion meter
9) Audio attenuator
10) Vector scope
11) Alignment tapes
    - For tracking adjustment
      (WR5-1CP) Part No. : 8-967-995-07
    - For video frequency characteristic adjustment
      (WR5-7CE) Part No. : 8-967-995-18
    - For L mode operation check
        - For SP (WR5-5CSP) Part No. : 8-967-995-46
          (WR5-4CSP) Part No. : 8-967-995-47
        - For LP (WR5-4CL) Part No. : 8-967-995-56
    - For E mode operation check (ME tape)
        - For SP (WR5-8CSE) Part No. : 8-967-995-48
        - For LP (WR5-8CLE) Part No. : 8-967-995-57
    - For Checking of AFM stereo operation
      (WR5-9CS) Part No. : 8-967-995-28
12) Adjustment remote control (J-6082-053-B)

10-1-2. Equipment Connection

According to the specification of the input terminal (S VIDEO or VIDEO), connect required measuring instruments as shown in Fig. 10-1. and perform adjustment. The input terminal is specified in the parentheses ( ) in the signal column. Unless otherwise specified, either terminal may be used. Note that the S VIDEO input terminal takes precedence. When performing adjustment with the VIDEO input terminal, pull out the connector from the S VIDEO input terminal.

Note 1 : When S VIDEO input is specified for a specific adjustment, if the adjustment is performed with VIDEO input, the product specifications for this unit may not be satisfied. The specified input must be always used.

Note 2 : If an adjustment is performed by using a VTR with S Video output terminal as a signal source, the performance of this unit will be affected by that VTR. A pattern generator with Y/C separation output terminal should be used wherever possible.

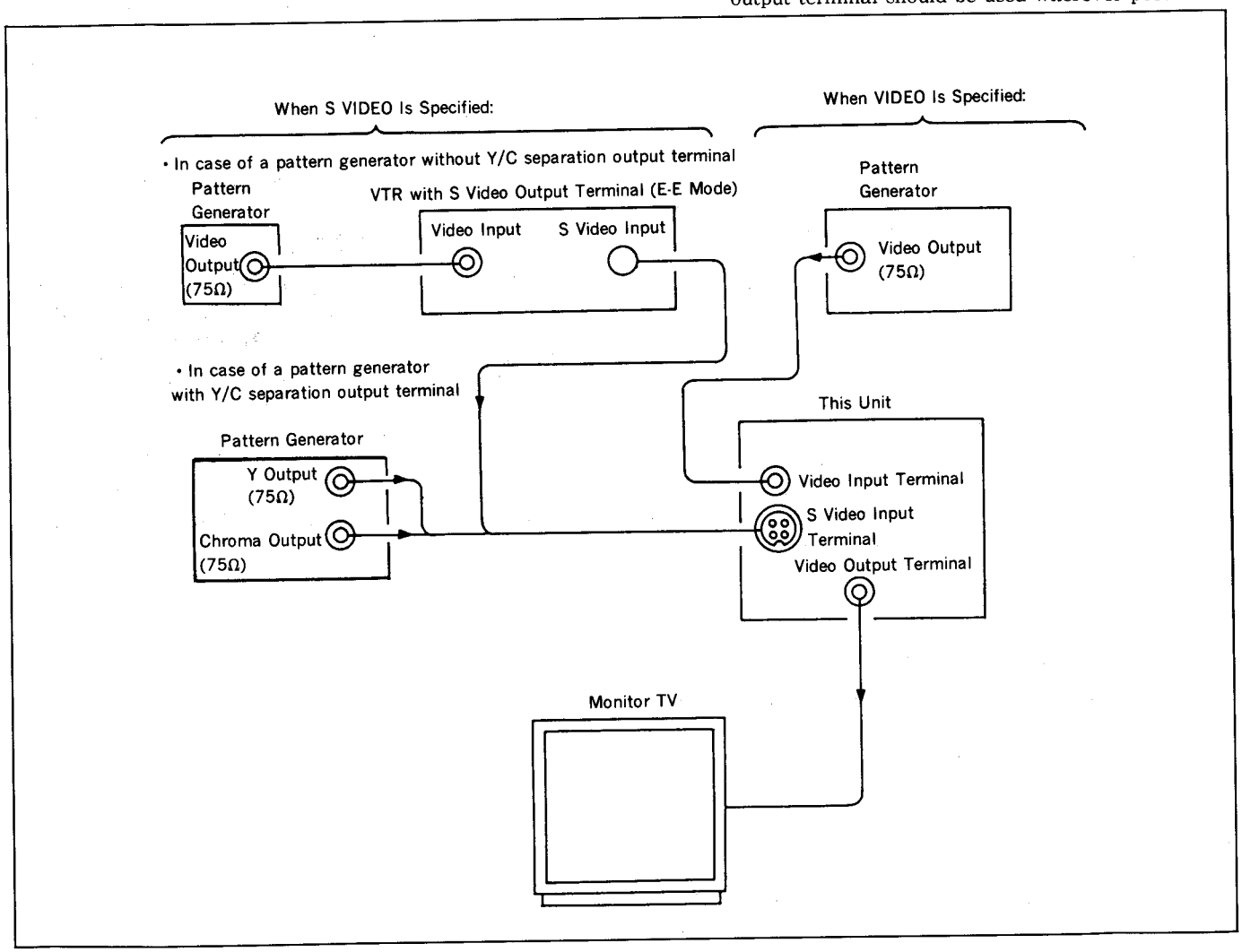


Fig. 10-1.

10-1-3. Input Signal Check

Video signal produced by a pattern generator is used as an adjustment signal to perform electrical alignment for this unit. This video signal must satisfy the specification.

1) S VIDEO Input

Connect an oscilloscope to the Y Signal terminal of the S Video Input terminal. Check that the synchronizing signal of the Y signal is approximately at 0.3Vp-p and that its video portion has an amplitude of approximately 0.7Vp-p. (When a VTR with S video output terminal is used, in addition to these checks, make sure that there are no residual chroma and burst signals.) Then, connect the scope to the Chroma signal terminal of the S Video Input terminal and check that the chroma signal has a burst signal amplitude of 0.3Vp-p and the burst signal waveform is flat. And check that the amplitude ratio of burst signal to chroma signal is 0.30 : 0.66. The Y and chroma signals used for electrical alignment are shown in Fig. 10-2.

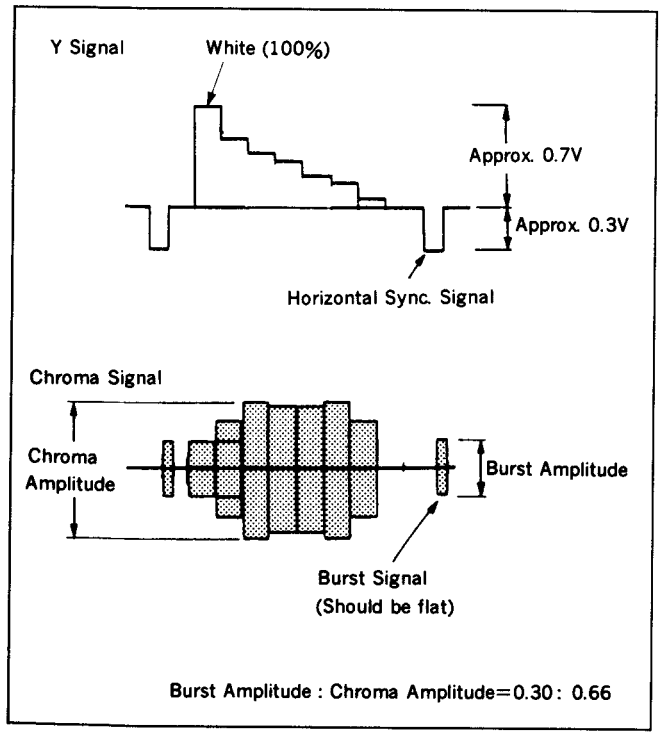


Fig. 10-2. Color Bar Signals of Pattern Generator

2) VIDEO Input

Connect an oscilloscope to the Video Input terminal. Check that the synchronizing signal of the Y signal has an amplitude of approximately 0.7V and that the burst signal has an amplitude of approximately 0.3V and its waveform is flat. And check that the level ratio of burst signal to "red" signal is 0.30 : 0.66.

The video signal (color bar) used for electrical aligning this unit is shown in Fig. 10-3.

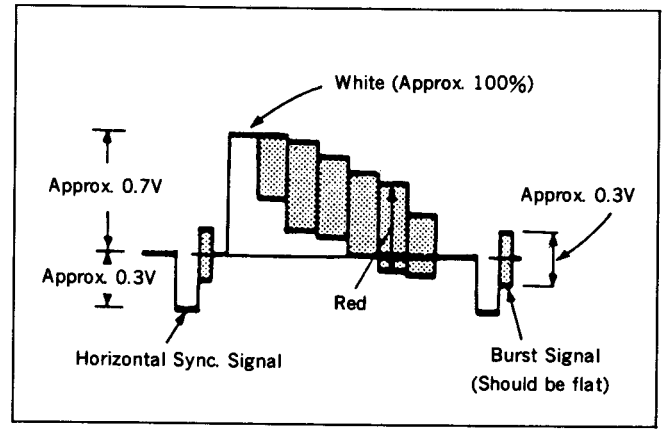


Fig. 10-3. Color Bar Signals of Pattern Generator

10-1-4. Alignment Tapes

The following alignment tapes are available.
The tape specified in the signal column for the adjustment to be performed should be used.

Note that if no tape code is specificed for the adjustments in which alignment tapes for operation check are used, any tape for operation check may be used.

Alignment Tape	Record Mode	Tape Type	Tape Speed	Contents of Record		Applications
				Video Area	PCM Area	
Tracking WR5-1CP	L	MP	SP	CH2 : 1MHz tape pass adjustment signal Switching position adjustment marker (CH1 : 9MHz)		Tape pass adjustment, Switching position adjustment
Video frequency characteristic WR5-7CE	E	ME	SP	RF sweep 0~15MHz Marker 2, 4.5, 7, 8.5, 10MHz		Frequency characteristic adjustment
Operation check WR5-4CSP or WR5-5CSP	L	MP	SP	● Video signal Color bar 4 min. Monoscope 4 min. ● Audio signal (AFM) 400Hz, 60% modulated	● Audio signal (PCM) Monoscope portion 20Hz 20sec. 400Hz 20sec. 14kHz 20sec. } This cycle is repeated 4 times Color bar portion 1kHz, 4min.	Operation check
WR5-8CSE	E	ME	SP		400Hz, 8 min.	
WR5-4CL	L	MP	LP	● Video signal Color bar 4 min. Monoscope 4 min. ● Audio signal (AFM) 400Hz, 60% modulated		
WR5-3CL	L	MP	LP		● Audio signal (PCM) 400Hz, 8 min.	
WR5-8CLE	E	ME	LP			
AFM stereo operation check WR5-9CS	L	MP	SP	● Video signal Color bar 4 min. Monoscope 4 min. ● Audio signal (AFM) Stereo portion (color bar) Lch : 400Hz Rch : 1kHz (L+R : 1.5MHz±60kHz DEV) (L−R : 1.7MHz±30kHz DEV) Bilingual portion (monoscope) MAIN : 400Hz (1.5MHz±60kHz DEV) SUB : 1kHz (1.7MHz±30kHz DEV)	● Audio signal (PCM) 400Hz, 8 min.	AFM stereo operation check

Note : Recording Mode
L ..... Conventional mode
E ..... Hi 8 (High Band) mode

Tape Type
MP ..... Metal powder tape
ME ..... Metal evaporated tape

The color bar signal recorded on these alignment tapes are shown in Fig. 10-4.

Note : This waveform is measured at the VIDEO OUT terminal (terminated at 75Ω).

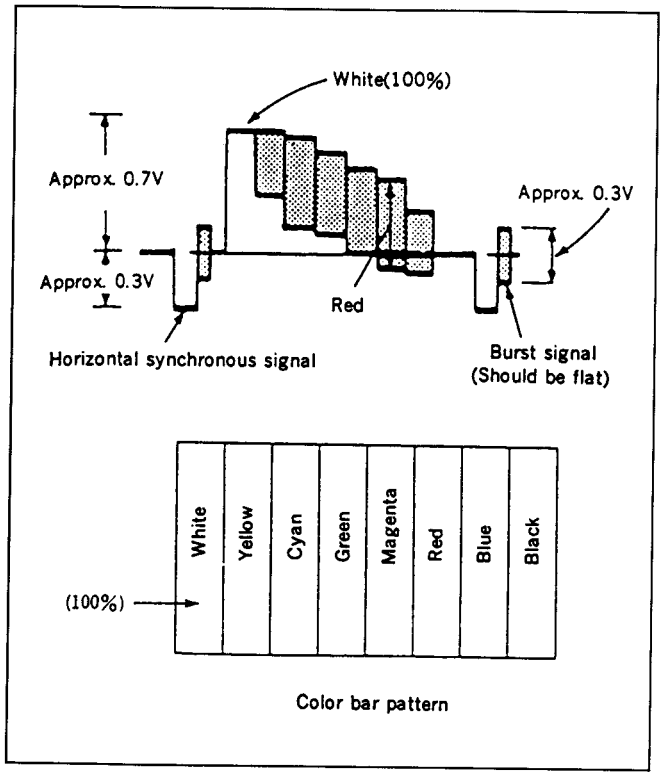


Fig. 10-4. Color Bar Signal of Alignment Tape

10-1-5. Input/Output Levels and Impedance

Video input : LINE IN 1/2 VIDEO
(phono jack) (1 each)
Input signal : 1Vp-p, 75 ohms, unbalanced, sync negative

Video output : LINE OUT 1 VIDEO (EV-S880E)
LINE OUT 1/3 (EV-C770E)
(phono jack) (1 each)
Output signal : 1Vp-p, 75ohms, unbalanced, sync negative
: LINE OUT 2 EURO-AV
21-pin (pin 19)
: LINE OUT 3 VIDEO (EV-C770E)
(phono jack) (1 each)
Output signal : 1Vp-p, 75ohrs, unbalanced, sync negative

S VIDEO input : LINE IN 1/2 S VIDEO
(4-pin, mini-DIN) (1 each)
Luminance signal : 1 Vp-p, 75 ohms, unbalanced, sync negative
Chrominance signal : 0.3 Vp-p, 75 ohms, unbalanced

S VIDEO output : LINE OUT 1 S VIDEO
(4-pin, mini-DIN) (1 each)
Luminance signal : 1 Vp-p, 75 ohms, unbalanced, sync negative
Chrominance signal : 0.3 Vp-p, 75 ohms, unbalanced
: LINE OUT 2 EURO-AV (S)
21-pin (pins 15 and 19)

Audio input : LINE IN 1/2 AUDIO
(phono jack) (2 each)
Input level : −7.5 dBs
Input impedance : more than 47 kilohms

Audio output : LINE OUT 1 AUDIO (EV-S880E)
LINE OUT 1/3 AUDIO (EV-C770E)
(phono jack) (2 each)
Standard impedance : less than 10 kilohms
: LINE OUT 2 EURO-AV
21-pin (pins 1 and 3)
: LINE OUT 3 AUDIO (EV-C770E)
(phono jack) (1 each)
Standard impedance : less than 10 kilohms

CONTROL S IN : Minijack

CONTROL L : 3 pin mini-mini jack

10-2. POWER SUPPLY CHECK

10-2-1. Output Voltage Check (PS-310 Board)

Mode	E-E
Measurement instrument	Digital voltmeter
UN 40V check	
Measurement point	CN1 pin ①
Specified value	40±3Vdc
UN 12V check	
Measurement point	CN1 pin ②
Specified value	14.6±1.0Vdc
UN 9V check	
Measurement point	CN1 pin ④
Specified value	11.0±0.7Vdc
UN 5.7V check	
Measurement point	CN1 pin ⑥
Specified value	5.7±0.2Vdc
SW 5V check	
Measurement point	CN1 pin ⑦
Specified value	5.0±0.2Vdc
UN −5V check	
Measurement point	CN1 pin ⑨
Specified value	−5.0±0.3Vdc
UN −30V check	
Measurement point	CN2 pin ④
Specified value	−30±3Vdc

[Check Method]

1) Each of these supply voltages must meet its specified value.

10-3. SYSTEM CONTROL SYSTEM ADJUSTMENTS

10-3-1. Timer Clock Adjustment (ST-48 Board) (EV-S880E ONLY)

Mode	T/T CLOCK Adjustment Mode
Signal	Arbitrary
Measurement point	IC001 pin ⑧ (CL188)
Measuring instrument	Frequency counter
Adjustment element	CT001
Specified value	4096.020±0.015Hz

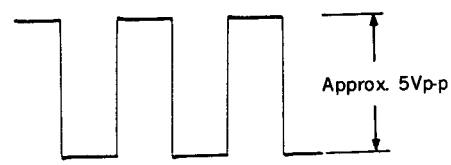
Note 1 : See "8. SERVICE MODE" for detailed information.

Note 2 : A frequency counter should be connected through a buffer amplifier (oscilloscope, etc.) having a high impedance and a low capacitance.

Note 3 : A beep continues to sound while the T/T adjustment mode is set.

[Adjustment Method]

1) Place the adjustment remote control RM-95 Note 1 in the HOLD ON position. Select the T/T CLOCK adjustment mode (page : 7, address : 58, data : 04).
2) Adjust to 4096.020±0.015Hz with CT001.
3) After the adjustment, return to the normal mode (page : 7, address : 58, data : 00) and set the remote control to HOLD OFF.



4096.020±0.015Hz

Fig. 10-5.

10-4. SERVO SYSTEM ADJUSTMENTS

10-4-1. Switching Position Adjustment

Mode	Playback
Signal	Alignment tape: For operation check (WR5-1CP)
Measurement point	CH-1: RP-160 board CN001 pin ② (RF SWP) CH-2: RP-160 board CN001 pin ⑤ (PB RF 2CH)
Measuring instrument	Oscilloscope
Adjustment page	0
Adjustment address	03 04
Specified value	t=0±5μsec

Note 1: See "8. SERVICE MODE" for the usage of the adjustment remote control.

Note 2: The functions available on addresses: 01, 03 and 04 are identical for both page: 0 and page: D.

[Adjustment Method]

1) Select the playback mode and place the adjustment remote control Note 1 in the HOLD ON position.
2) Release the EEPROM write protect (page: 0 or D, address: 01, data: 80). (Press the PAUSE button in order to store the data.)
3) Change the data on address: 04 to t=0±25.6μ sec. (Press the PAUSE button in order to store the data.)
4) Change the data on address: 03 to t=0±5μ sec. (Press the PAUSE button in order to store the data.)
5) After the adjustment, set the EEPROM write protect (page: 0 , address: 01, data: 00). (Press the PAUSE button in order to store the data.)
6) Set the remote control to HOLD ON.

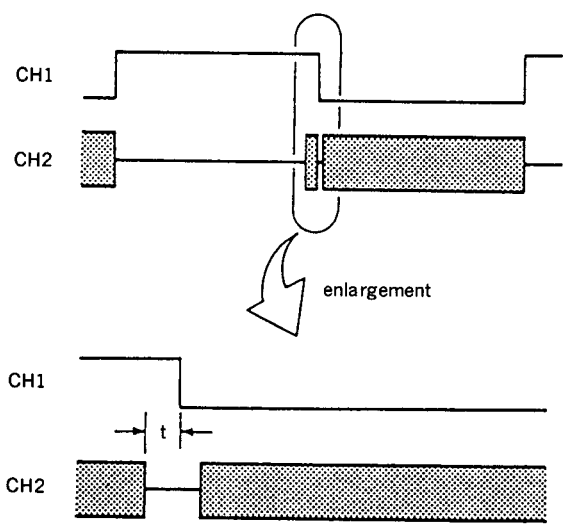


Fig. 10-6.

10-4-2. SLOW Adjustment

Mode	LP Self-record playback SLOW (1/5) SP Self-record playback SLOW (1/5) LP Self-record playback −SLOW (−1/5) SP Self-record playback −SLOW (−1/5) LP Self-record playback ×2 SP Self-record playback ×2
Signal	Color bar
Measurement point	CH-1: RP-160 board CN001 pin ② (RF SWP) CH-2: RP-160 board CN001 pin ③ (RF OUT)
Measuring instrument	Oscilloscope
Adjustment page	D
Adjustment address	1C (SLOW TRACON DATA (LP)) 1D (SLOW TRACON DATA (SP)) 1E (−SLOW TRACON DATA (LP)) 1F (−SLOW TRACON DATA (SP)) 20 (×2 TRACON (LP)) 21 (×2 TRACON (SP))
Specified value	A=B

Note: See "8. SERVICE MODE" for the usage of the remote control.

[Adjustment Method]

1) Record color bar signal for about one minute in both LP and SP modes.
2) Adjust in the respective SLOW modes.
3) Set the adjustment remote control Note 1 to HOLD ON and release the EEPROM write protect (page: 0, address: 01, data: 80). (Press the PAUSE button in order to store the data.)
4) Set the adjustment address (1C to 21) in the respective SLOW or ×2 modes and change the adjustment data so that A is equal to B. (Press PAUSE button to store the data.)
5) After the adjustment is completed in the respective SLOW modes, set the EEPROM write protect (page: 0, address: 01, data: 00). (Press PAUSE button in order to store the data.)
6) Set the remote control to HOLD OFF.

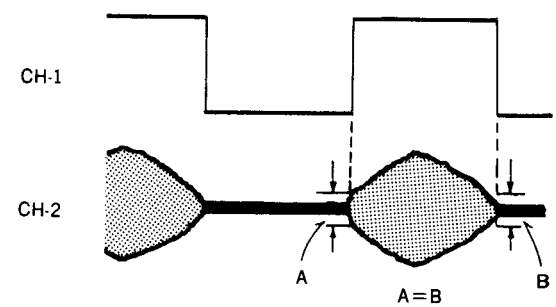


Fig. 10-7.

10-5. VIDEO SYSTEM ADJUSTMENTS

Color video signal supplied from a pattern generator is used as a video input signal for Video System Alignment in the Recording mode. This signal should be checked to ensure that it meets the specifications provided in Figs. 10-2 and 10-3 and "INPUT SIGNAL CHECK".

The adjustments in Video System Alignment should be performed in the following sequence.

[Adjustment sequence]

1. Playback Frequency Characteristic Adjustment
2. SYNC AGC Adjustment
3. IR Adjustment
4. Chroma Comb Filter Adjustment
5. Video Input Y/C Separation Check
6. Pre-emphasis Input Level Adjustment
7. Chroma Emphasis Adjustment
8. Recording Y Level Adjustment
9. L Mode Y FM Carrier Frequency, Y FM Deviation Adjustment
10. E Mode Y FM Carrier Frequency, Y FM Deviation Adjustment
11. Recording Chroma Level Adjustment
12. L Mode De-emphasis Level Adjustment
13. E Mode De-emphasis Level Adjustment
14. L Mode Playback Level Adjustment
15. E Mode Playback Level Adjustment
16. Quasi, DL Burst Adjustment

10-5-1. Playback Frequency Characteristic Adjustment (RP-160 Board)

Note : The designation 〔 〕 stands for adjustment on CH-2.

Mode	Playback
Signal	Alignment tape: for frequency characteristic adjustment (WR5-7CE)
Measurement point	CN001 pin ⑥ (PB RF 1CH) 〔CN001 pin ⑤ (PB RF 2CH)〕 External trigger: CN001 pin ② (RF SWP) Trigger slope: − 〔+〕
Measuring instrument	Oscilloscope
Adjustment element	RV001 〔RV002〕
Specified value	4.5MHz level: 8.5MHz level=3 : (2±0.2)

[Adjustment Method]

1) Use RV001 [RV002] to adjust so that the ratio of 4.5MHz level to 8.5MHz of PB RF output waveform is 3 : (2±0.2).

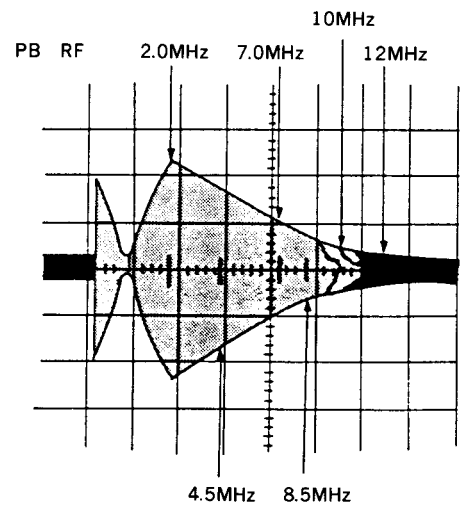


Fig. 10-8.

10-5-2. SYNC AGC Adjustment (VA-79 Board)

Mode	E-E
Signal	Color bar (S VIDEO)
Measurement point	CN101 pin ㉘
Measuring instrument	Oscilloscope
Adjustment element	RV101
Specified value	0.500±0.025Vp-p

[Adjustment Method]

1) Use RV101 to adjust to 0.5000±0.025Vp-p.

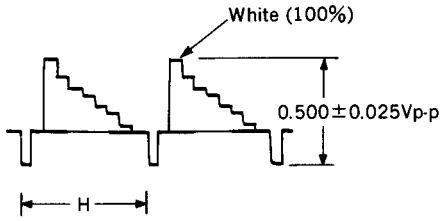


Fig. 10-9.

10-5-3. IR Adjustment (VA-79 Board)

Mode	E-E
Signal	S Video input, Y signal terminal : Color bar S Video input, C signal terminal : Chroma signal (or Color bar)
Measurement point	IC101 pin ⑦
Measuring instrument	Oscilloscope
Adjustment element	RV106
Specified value	Red residual chroma component should be minimized (50mVp-p or less).

[Connection]

1) Connect between pin ㊿ and pin ㊸ of IC101.

[Adjustment Method]

1) Use RV106 to adjust so that the red residual chroma component is minimized (50mVp-p or less).

Note : After this adjustment, remove to connect.

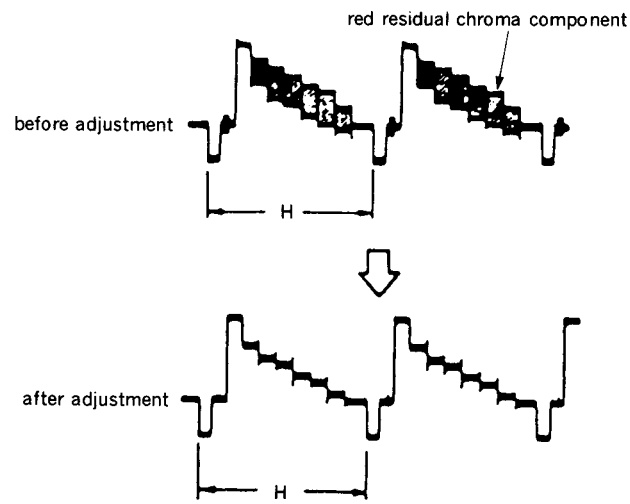


Fig. 10-10.

10-5-4. Chroma Comb Filter Adjustment (VA-79 Board)

Mode	Self-record playback
Signal	Color bar
Measurement point	IC101 pin ⑪ (C+CD)
Measuring instrument	Oscilloscope
Adjustment element	RV108 RV801
Specified value	Red residual chroma component should be minimized (30mVp-p or less).

[Adjustment Method]

1) Record to color bar.
2) Play back recorded portion.
3) Adjust RV108 and RV801 alternately to minimize the red residual chroma component (30mVp-p or less).

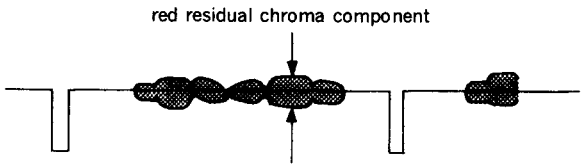


Fig. 10-11.

10-5-5. Video Input Y/C Separation Check

Note : The S Video Line output terminal should be terminated at 75Ω.

(1) Y Level Check (ST-48 Board)

Mode	E-E
Signal	Color bar (VIDEO)
Measurement point	CN801 pin ⑫ (L OUT Y (X)) (CL934)
Measuring instrument	Oscilloscope
Specified value	Check : Y=0.98±0.05Vp-p V=690±40mVp-p S=290±30mVp-p C≦40mVp-p

[Check Methed]

1) Check to Y=0.98±0.05Vp-p.
2) Verify that the specified value is met for each level.

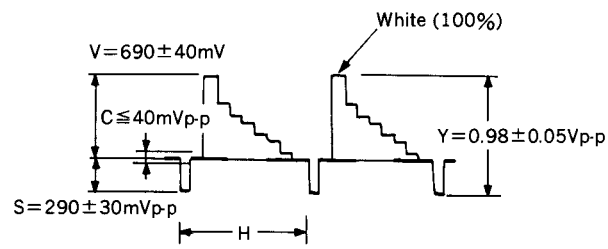


Fig. 10-12.

(2) Chroma Level Check (ST-48 Board)

Mode	E-E
Signal	Color bar (VIDEO)
Measurement point	CN003 pin ⑤ (REC C OUT (X)) (CL711)
Measuring instrument	Oscilloscope
Specified value	C=135±20mVp-p C_R=270±30mVp-p

[Check Method]

1) Verify that the specified value is met for each level.

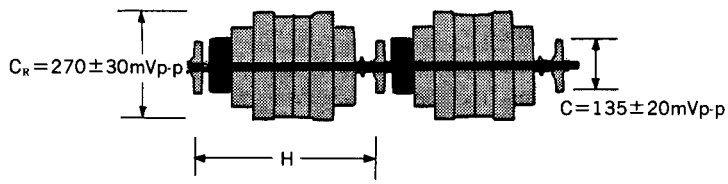


Fig. 10-13.

10-5-6. Pre-emphasis Input Level Adjustment (VA-79 Board)

Mode	E-E
Signal	Color bar (S VIDEO)
Measurement point	IC101 pin ③
Measuring instrument	Oscilloscope
Adjustment element	RV110
Specified value	0.500±0.025Vp-p

[Adjustment Method]

1) Use RV110 and adjust to 0.500±0.025Vp-p.

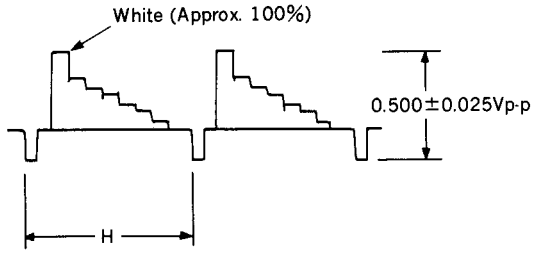


Fig. 10-14.

10-5-7. Chroma Emphasis Adjustment (VA-79 Board)

Mode	E-E
Signal	Color bar
Measurement point	IC301 pin ㉔ (B.EMPH 0)
Measuring instrument	Oscilloscope
Adjustment element	FL302
Specified value	f0 component should be reduced to a minimum.

[Adjustment Method]

1) Adjust FL302 to allow the latter half of the yellow component in the chroma signal to have a minimum amplitude.

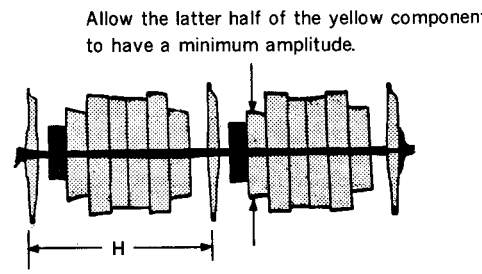


Fig. 10-15.

10-5-8. Recording Y Level Adjustment (VA-79 Board)

Mode	E-E
Signal	No signal
Measurement point	CN101 pin ③
Measuring instrument	Oscilloscope (20MHz bandwidth)
Adjustment element	RV502
Specified value	420±10mVp-p

Note : Set an oscilloscope to 20MHz bandwidth.

[Adjustment Method]

1) Insert ME tape.
2) Use RV502 to adjust to 420±10mVp-p.

Fig. 10-16.

10-5-9. L Mode Y FM Carrier Frequency, Y FM Deviation Adjustment

Note 1 : After this adjustment, be sure to perform "10-5-10. E Mode Y FM Carrier Frequency, Y FM Deviation Adjustment".

Note 2 : The S Video Line output terminal should be terminated at 75Ω.

(1) L Mode Y FM Carrier Frequency Adjustment (VA-79 Board)

Mode	E-E
Signal	No signal
Measurement point	IC101 pin ㊸ (Y RF OUT)
Measuring instrument	Frequency counter Oscilloscope
Adjustment element	RV105
Specified value	4.37±0.05MHz

Note : A frequency counter should be connected through a buffer amplifier (oscilloscope, etc.) having a high impedance and a low capacitance.

[Adjustment Method]

1) Insert MP type cassette tape.
2) Use RV105 to adjust to 4.37±0.05MHz.

Fig. 10-17.

(2) L Mode Y FM Deviation Adjustment (VA-79 Board)

Mode	Record and playback
Signal	Color bar (S VIDEO)
Measurement point	S Video Line Output, Y Signal terminal
Measuring instrument	Oscilloscope
Adjustment element	RV103
Specified value	Playback level should be at 1.00±0.05Vp-p.

[Adjustment Method]

1) Insert MP type cassette tape.
2) Record color bar signal.
3) Play back the recorded signal.
4) Check the playback output level.
   Specification: 1.00±0.05Vp-p
5) If the specification is not met, rotate RV103 as directed below and then repeat Steps 1) to 4).

	Direction of Rotating RV103
Over specified value	Counterclockwise (↺)
Below specified value	Clockwise (↻)

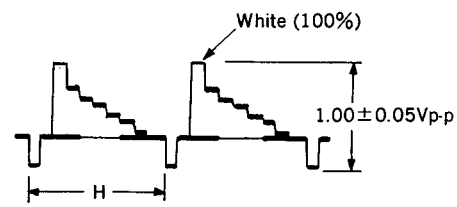


Fig. 10-18.

10-5-10. E Mode Y FM Carrier Frequency, Y FM Deviation Adjustment

Note 1: When performing this adjustment, it is a prerequisite that "10-5-9. L Mode FM Carrier Frequency, Y FM Deviation Adjustment" has been completed.

Note 2: The S Video Line output terminal should be terminated at 75Ω.

(1) E Mode Y FM Carrier Frequency Adjustment (VA-79 Board)

Mode	E-E
Signal	No signal
Measurement point	IC101 pin ㊸ (Y RF OUT)
Measuring instrument	Frequency counter Oscilloscope
Adjustment element	RV104
Specified value	5.96±0.05MHz

Note: A frequency counter should be connected through a buffer amplifier (oscilloscope, etc.) having a high impedance and a low capacitance.

[Adjustment Method]

1) Insert ME type cassette tape.
2) Use RV104 to adjust to 5.96±0.05MHz.

5.96±0.05MHz

Fig. 10-19.

(2) E Mode Y FM Deviation Adjustment (VA-79 Board)

Mode	Record and playback
Signal	Color bar (S VIDEO)
Measurement point	S Video Line Output, Y Signal terminal
Measuring instrument	Oscilloscope
Adjustment element	RV102
Specified value	Playback level should be at 1.00±0.05Vp-p.

[Adjustment Method]

1) Insert ME type cassette tape.
2) Record color bar signal.
3) Play back the recorded signal.
4) Check the playback output level.
   Specification: 1.00±0.05Vp-p
5) If the specification is not met, rotate RV102 as directed below and then repeat Steps 1) to 4).

	Direction of Rotating RV102
Over specified value	Counterclockwise (↶)
Below specified value	Clockwise (↷)

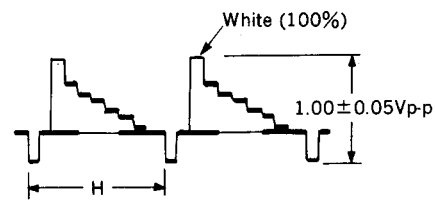


Fig. 10-20.

10-5-11. Recording Chroma Level Adjustment (VA-79 Board)

Mode	E-E
Signal	Color bar
Measurement point	① IC501 pin ⑤ ② IC501 pin ① ③ IC501 pin ③
Measuring instrument	Oscilloscope
Adjustment element	① RV501 ② RV503 ③ RV504
Specified value	① 135±10mVp-p ② 140±10mVp-p ③ 140±10mVp-p

[Connection]

1) Connect between emitter and collector of Q901.

[Adjustment Method]

1) Adjust RV501 so that the flat portion of the chroma signal red component has the level 135±10mVp-p.
2) Adjust RV503 so that the flat portion of the chroma signal red component has the level 140±10mVp-p.
3) Adjust RV504 so that the flat portion of the chroma signal red component has the level 140±10mVp-p.

Note : After this Adjustment, remove to connect.

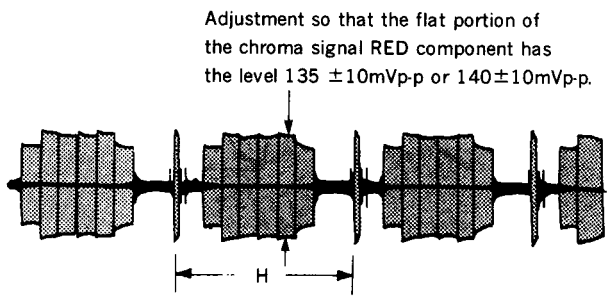


Fig. 10-21.

10-5-12. L Mode De-emphasis Level Adjustment (VA-79 Board)

Mode	Playback
Signal	Alignment tape: For operation check, color bar portion (WR5-5CSP)
Measurement point	IC101 pin ⑮ (Y CCD OUT)
Measuring instrument	Oscilloscope Digital Voltmeter
Adjustment element	RV250
Specified value	0.500±0.025Vp-p

[Adjustment Method]

1) Use RV250 to adjust to 0.500±0.025Vp-p.
2) After this adjustment, check that pin ⑳ of CN102 is 1 Vdc or less.

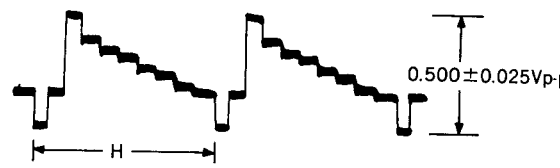


Fig. 10-22.

10-5-13. E Mode De-emphasis Level Adjustment (VA-79 Board)

Mode	Playback
Signal	Alignment tape: For operation check, color bar portion (WR5-8CSE)
Measurement point	IC101 pin ⑮ (Y CCD OUT)
Measuring instrument	Oscilloscope Digital voltmeter
Adjustment element	RV111
Specified value	0.500±0.025Vp-p

[Adjustment Method]

1) Use RV111 to adjust to 0.500±0.025Vp-p.
2) After this adjustment, check that pin ⑳ of CN102 is 4Vdc or more.

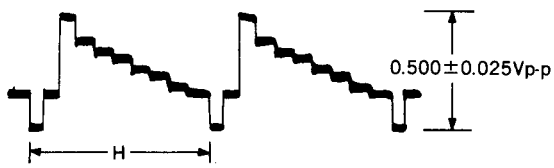


Fig. 10-23.

10-5-14. L Mode Playback Level Adjustment (VA-79 Board)

Mode	Playback
Signal	Alignment tape: For operation check, color bar portion (WR5-5CSP)
Measurement point	CN101 pin ㉘
Measuring instrument	Oscilloscope
Adjustment element	RV251
Specified value	0.500±0.025Vp-p

[Adjustment Method]

1) Use RV251 to adjust to 0.500±0.025Vp-p.

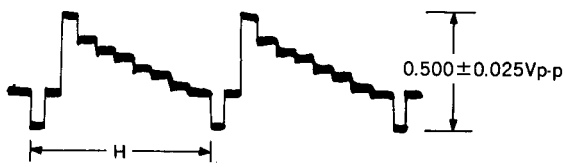


Fig. 10-24.

10-5-15. E Mode Playback Level Adjustment (VA-79 Board)

Mode	Playback
Signal	Alignment tape: For operation check, color bar portion (WR5-8CSE)
Measurement point	CN101 pin ㉘
Measuring instrument	Oscilloscope
Adjustment element	RV109
Specified value	0.500±0.025Vp-p

[Adjustment Method]

1) Use RV109 to adjust to 0.500±0.025Vp-p.

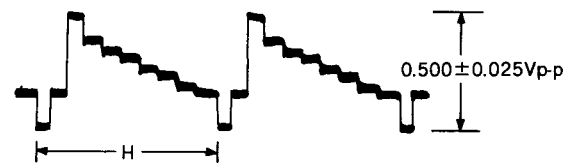


Fig. 10-25.

10-5-16. Quasi, DL Burst Adjustment (VA-79 Board) (Use a Vectorscope)

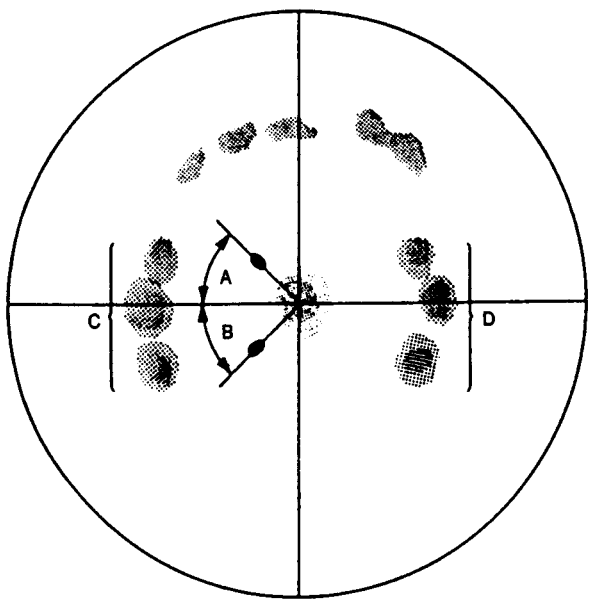
Mode	Playback+Pause
Signal	Alignment tape: For operation check Color bar portion (WR5-5CSP)
Measurement point	Video output terminal
Measuring instrument	Vectorscope
Adjustment element	RV751 (QUASI BURST) RV752 (DL BURST)
Specified value	See Fig.10-26.

[Connection]

1) Input 4.43MHz signal from Pin⑫ of IC301 to 1CH of an oscilloscope.
2) Connect 1CH output of an oscilloscope to the EXT. subcarrier reference input of a vectorscope.
3) Put on the EXT. subcarrier switch of a vectorscope.

[Adjustment Method]

1) Adjust with RV751 so as to equalize A and B as shown in Fig. 10-26.
2) Adjust with RV752 so as to minimize the shaking of each three brighting point of C and D.



RV751 : A=B
RV752 : make C and a contrast

Fig. 10-26.

10-6. DIGITAL SYSTEM ADJUSTMENTS

[Adjustment Method]

1. Read Clock Adjustment
2. Encord FSC Adjustment
3. AFC Adjustment
4. APC Adjustment
5. CNR Phase Adjustment
6. CNR Gain Adjustment

10-6-1. Read Clock Adjustment (ST-48 Board)

Mode	Playback+Still
Signal	Alignment tape: For operation check (WR5-5CSP or WR5-8CSE)
Measurement point	IC706 pin ⑯ (CL792)
Measuring instrument	Frequency counter Oscilloscope
Adjustment element	CT701
Specified value	1421890±50Hz

Note : A frequency counter should be connected through a buffer amplifier (oscilloscope, etc.) having a high impedance and a low capacitance.

[Adjustment Method]

1) Use CT701 to adjust to 1421890±50Hz.

1421890±50Hz

Fig. 10-27.

10-6-2. Encord FSC Adjustment (ST-48 Board)

Mode	Playback+Still
Signal	Alignment tape : For operation check (WR5-5CSP or WR5-8CSE)
Measurement point	IC706 pin ㊶ (CL738)
Measuring instrument	Frequency counter Oscilloscope
Adjustment element	CT702
Specified value	4433630±25Hz

Note : A frequency counter should be connected through a buffer amplifier (oscilloscope, etc.) having a high impedance and a low capacitance.

[Adjustment Method]

1) Use CT702 to adjust to 4433630±25Hz.

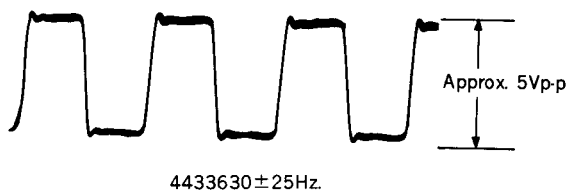


Fig. 10-28.

10-6-3. AFC Adjustment (ST-48 Board)

Mode	E-E
Signal	Color bar
Measurement point	IC707 pin ㊽ (CL815)
Measuring instrument	Digital voltmeter (High impedance input)
Adjustment element	CT704
Specified value	2.80±0.05Vdc

[Adjustment Method]

1) Use CT704 to adjust to 2.80±0.05Vdc.

10-6-4. APC Adjustment (ST-48 Board)

Mode	E-E
Signal	Color bar
Measurement point	IC706 pin ㊾ (CL749)
Measuring instrument	Digital voltmeter (High impedance input) Oscilloscope
Adjustment element	CT703
Specified value	2.30±0.05Vdc

[Adjustment Method]

1) Use CT703 to adjust to 2.30±0.05Vdc.
2) After this adjustment, check that waveform is 0.3Vp-p or less.

Fig. 10-29.

10-6-5. CNR Phase Adjustment (ST-48 Board)

Mode	Playback
Signal	Alignment tape: For operation check, color bar portion (WR5-8CSE)
Measurement point	CH1 : Q730 emitter (CL829) CH2 : Q729 emitter (CL828)
Measuring instrument	Oscilloscope
Adjustment element	RV703
specified value	t=0±5nsec

[Adjustment Method]

1) Use RV703 so that the phase difference in the burst portion of CH1 and CH2 is 0±5nsec.

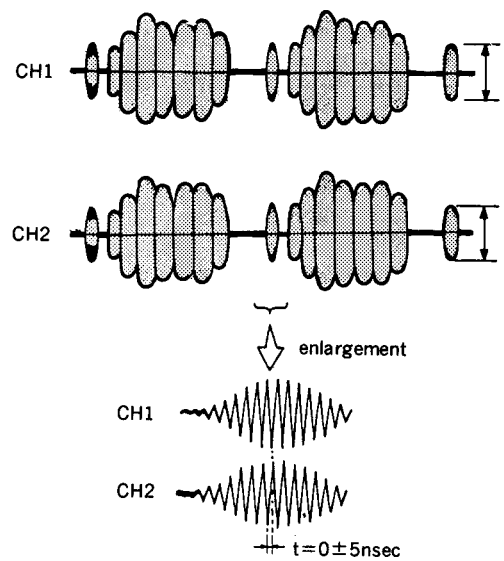


Fig. 10-30.

10-6-6. CNR Gain Adjustment (ST-48 Board)

Mode	Playback
Signal	Alignment tape : For operation check, color bar portion (WR5-8CSE)
Measurement point	CN801 pin ⑤ (MONITOR OUT C (X))
Measuring instrument	Oscilloscope
Adjustment element	RV704
Specified value	300±10mVp-p

Note : The line 1 S video terminal shuld be terminated at 75Ω.

[Adjustment Method]

1) Use RV704 so that the burst level is at 300±10mVp-p.

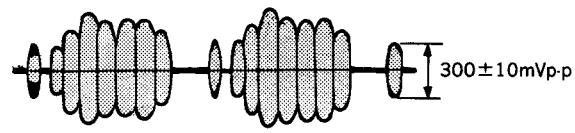


Fig. 10-31.

10-7. CHARACTER GENERATOR SYSTEM ADJUSTMENTS

10-7-1. CG OSC Adjustment (ST-48 Board)

Mode	Record
Signal	Arbitrary
Measurement point	IC901 pin ⑤ (CG OSC)
Measuring instrument	Frequency counter Oscilloscope
Adjustment element	CT901
Specified value	6.85±0.05MHz

Note : A frequency counter should be connected through a buffer amplifier (oscilloscope, etc.) having a high impedance and a low capacitance.

[Adjustment Method]

1) Connect pin ㉚ of IC901 (CL908) and SW 5V.
2) Use CT901 to adjust to 6.85±0.05MHz.
3) After this adjustment, remove to connect.

Fig. 10-32.

10-8. AFM AUDIO SYSTEM ADJUSTMENTS

Color bar signal should be used as Video signal input for performing this adjustment.

[Connection of Equipment for Audio Measurement]

In addition to equipment for video measurement, the audio measurement equipment should be connected as illustrated below.

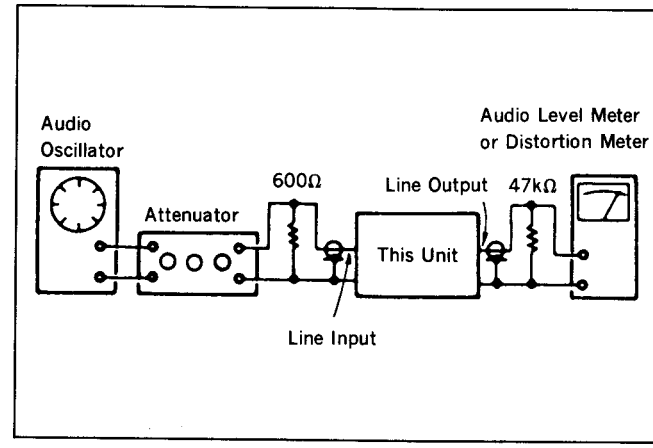


Fig. 10-33.

Unless otherwise specified, place the switches and controls of this unit in the following positions:

● Input Select switch ..... LINE 1

The adjustments should be performed in the following sequence.

[Adjustment sequence]

1. Carrier Frequency 1.5MHz Check
2. Carrier Frequency 1.7MHz Check
3. 1.5MHz Deviation Adjustment
4. 1.7MHz Deviation Adjustment
5. E-E Output Level Check
6. Playback Level Check
7. Overall Frequency Characteristic Check
8. Overall Distortion Factor Check
9. Overall Noise Level Check

10-8-1. Carrier Frequency 1.5MHz Check (VA-79 Board)

Mode	Record
Signal	No signal
Measurement point	IC901 pin ⑧③ (VCO OUT)
Measuring instrument	Frequency counter
Specified value	1500±3kHz

Note : A frequency counter should be connected through a buffer amplifier (oscilloscope, etc.) having a high impedance and a low capacitance.

[Check Method]

1) Check to 1500±3kHz.

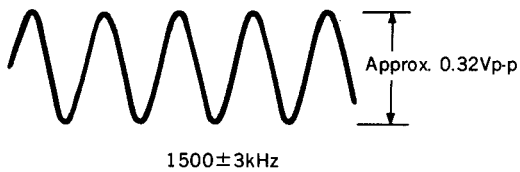


Fig. 10-34.

10-8-2. Carrier Frequency 1.7MHz Check (VA-79 Board)

Mode	Record
Signal	No signal
Measurement point	IC901 pin ⑥⑤ (VCO OUT)
Measuring instrument	Frequency counter
Specified value	1700±3kHz

Note : A frequency counter should be connected through a buffer amplifier (oscilloscope, etc.) having a high impedance and a low capacitance.

[Check Method]

1) Check to 1700±3kHz.

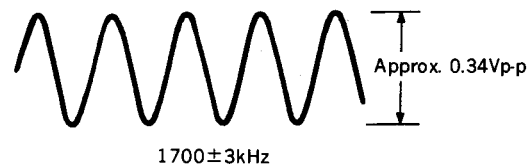


Fig. 10-35.

10-8-3. 1.5MHz Deviation Adjustment (VA-79 Board)

Mode	Playback
Signal	Alignment tape: For operation check, bilingual portion (WR5-9CS)
Measurement point	Audio Line Output terminal, left
Measuring instrument	Audio level meter
Adjustment element	RV901
Specified value	−7.5±0.5dBs

[Adjustment Method]

1) Use RV901 to adjust to −7.5±0.5dBs.

10-8-4. 1.7MHz Deviation Adjustment (VA-79 Board)

Mode	Playback
Signal	Alignment tape: For operation check, bilingual portion (WR5-9CS)
Measurement point	Audio Line Output terminal, left
Measuring instrument	Audio level meter
Adjustment element	RV902
Specified value	−7.5±0.5dBs

[Adjustment Method]

1) Use RV902 to adjust to −7.5±0.5dBs.

10-8-5. E-E Output Level Check

Mode	E-E
Signal	400Hz, −7.5dBs
Measurement point	Audio Line Output terminals, left and right
Measuring instrument	Audio level meter
Specified value	−7.5±3dBs

[Check Method]

1) Check that the respective levels of Audio Line Output terminals, left and right are −7.5±3dBs.

10-8-6. Playback Level Check

Mode	Playback
Signal	Alignment tape : For operation Check, 400Hz portion (WR5-9CS)
Measurement point	Audio Line Output terminals, left and right
Measuring instrument	Audio level meter
Specified value	−7.5±2dBs

[Check Method]

1) Check to −7.5dBs±2dBs.

10-8-7. Overall Frequency Characteristic Check

Mode	Self-record playback
Signal	Ⓐ 400Hz, −7.5dBs Ⓑ 20Hz, −7.5dBs © 14kHz, −7.5dBs : Audio Line Input terminals, left 〔right〕 No signal: Audio Line Input terminals, left 〔right〕
Measurement point	Audio Line Output terminals, left 〔right〕
Measuring instrument	Audio level meter
Specified value	The playback output levels of 20Hz and 14kHz should be 0±3dBs with 400Hz playback output level at 0dBs.

Note 1: The brackets [ ] represents the measurement point on the right.

Note 2: Always insert a shorting plug into the terminal side where no signal is input.

[Check Method]

1) Input signals Ⓐ to © to the Audio Line Input terminal, left [right] and record them in turn.
2) Play back the recorded portion.
3) Check that the respective playback output levels of 20Hz and 14kHz are 0±3dBs with 400Hz playback output level at 0dBs.

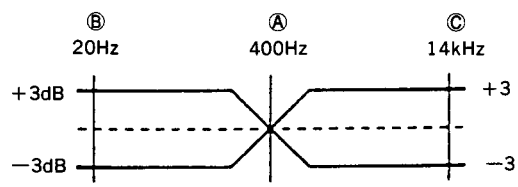


Fig. 10-36.

10-8-8. Overall Distortion Factor Check

Mode	Self-record playback
Signal	400Hz, −7.5dBs : Audio Line Input terminals, left 〔right〕
Measurement point	Audio Line Output terminals, left 〔right〕
Measuring instrument	Distortion meter
Specified value	Left side : 0.5% or less Right side : 1.0% or less

Note 1: The brackets [ ] represents the measurement point on the right.

Note 2: Always insert a shorting plug into the terminal side where no signal is input.

[Check Method]

1) Input signal to the Audio line Input terminal, left [right] and record it.
2) Play back the recorded portion.
3) Check that the distortion factor is 0.5% or less on the left side and 1.0% or less on the right side.

Note 3: These are values when a 200Hz - 6kHz BPF is used.

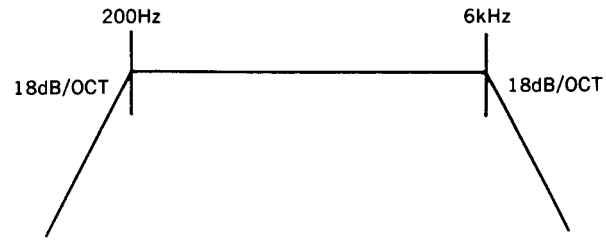


Fig. 10-37.

10-8-9. Overall Noise Level Check

Mode	Self-record playback
Signal	No signal (Insert a shorting plug into the Audio Line Input jacks, left and right.)
Measurement point	Audio Line Output terminals, left 〔right〕
Measuring instrument	Audio level meter
Specified value	Left side : −68dBs or less Right side : −63dBs or less

Note 1: The brackets [ ] represents the measurement point on the right.

Note 1: Always insert a shorting plug into the terminal side where no signal is input.

[Check Method]

1) Record.
2) Play back recorded portion.
3) Check that the noise level is −68dBs or less on the left side and −63dBs or less on the right side.

Note: These are values when an IHF-A weighing filter is used.

10-9. TUNER SYSTEM ADJUSTMENTS (EV-S880E only)

This adjustment should be made in the VHF/UHF Broadcasting Listening mode.
The adjustments should be made in the following sequence.

[Adjustment sequence]

1. AGC Adjustment
2. Separation Adjustment

10-9-1. AGC Adjustment (TU-100 Board)

Mode	E-E
Signal	TV signal (62dBμ)
Measurement point	IF001 pin ①
Measuring instrument	Digital voltmeter
Adjustment element	AGC VR (IF001)
Specified value	6±0.3V

[Adjustment Method]

1) Use AGC VR to adjust the voltage value to 6±0.3V.
2) Input TV signal of 60dBμ and make sure that the voltage is 7V or more.

10-9-2. Separation Adjustment (TU-100 Board)

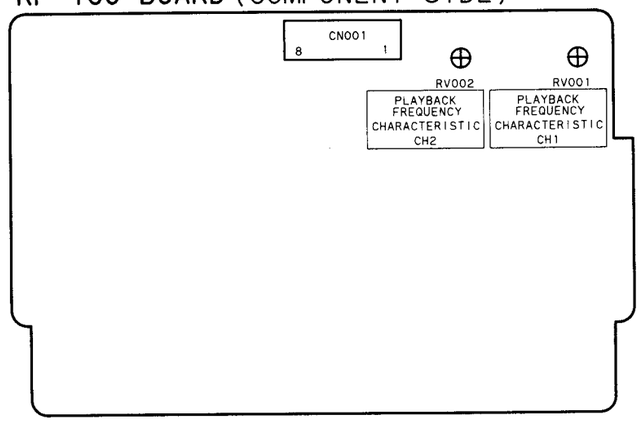
Signal	Stereo L CH: 400Hz, 100% modulated R CH: No modulation
Measurement point	Audio Line Output terminals, left and right
Measuring instrument	Oscilloscope
Adjustment element	RV001

[Adjustment Method]

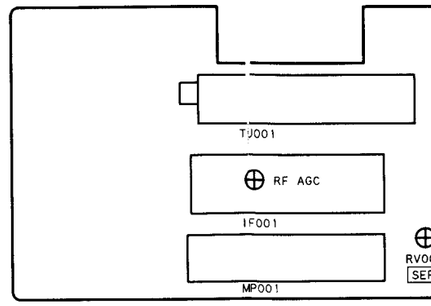
1) Set a sound multiplex signal generator to Stereo mode. Set L CH to 400Hz, 100% modulated.
2) Connect an oscilloscope to the R channel of Audio Line Output.
3) Adjust RV001 so that R CH output is minimized. In this adjustment, Do not rotate R001 fully.

10-10. Adjusting Parts Location Diagram

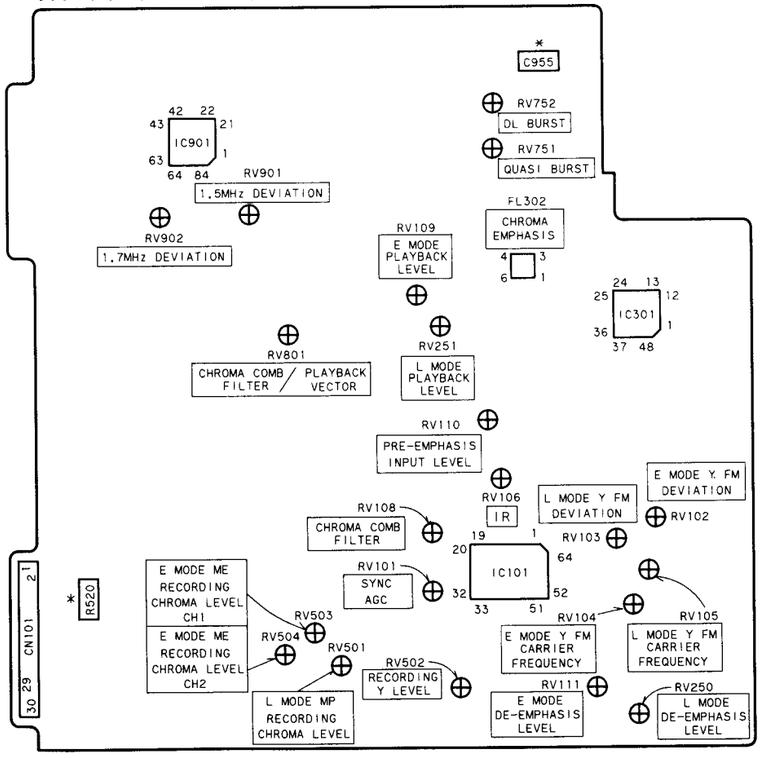
RP-160 BOARD (COMPONENT SIDE)



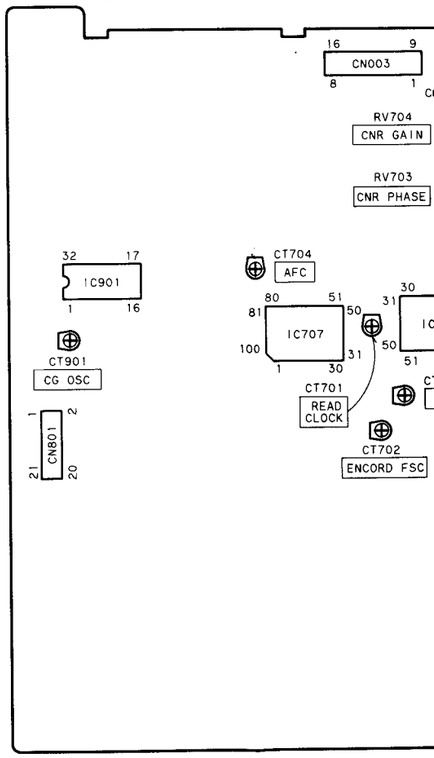
TU-100 BOARD (COMPONENT S



VA-79 BOARD (COMPONENT SIDE)



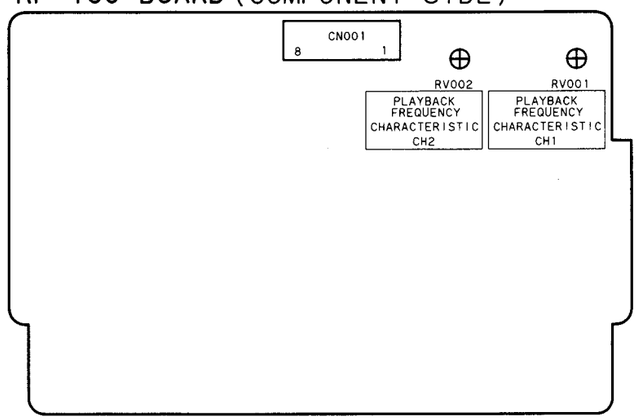
ST-48 BOARD (COMPONENT SI



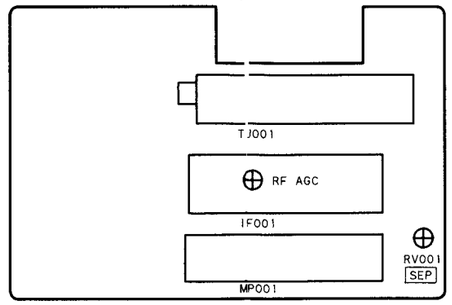
*Indicates a adjustment element mounted on the conductor side.

10-10. Adjusting Parts Location Diagram

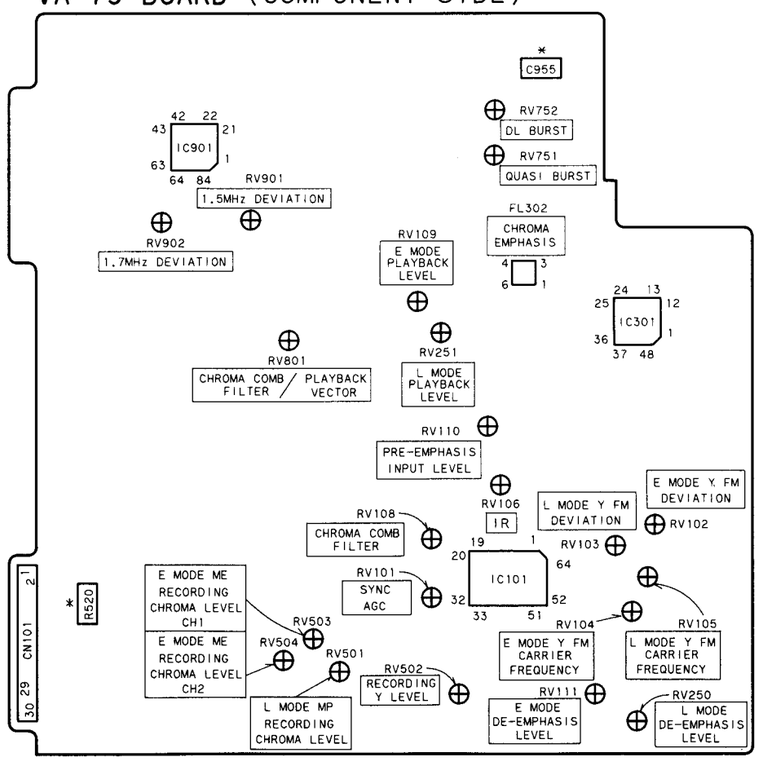
RP-160 BOARD (COMPONENT SIDE)



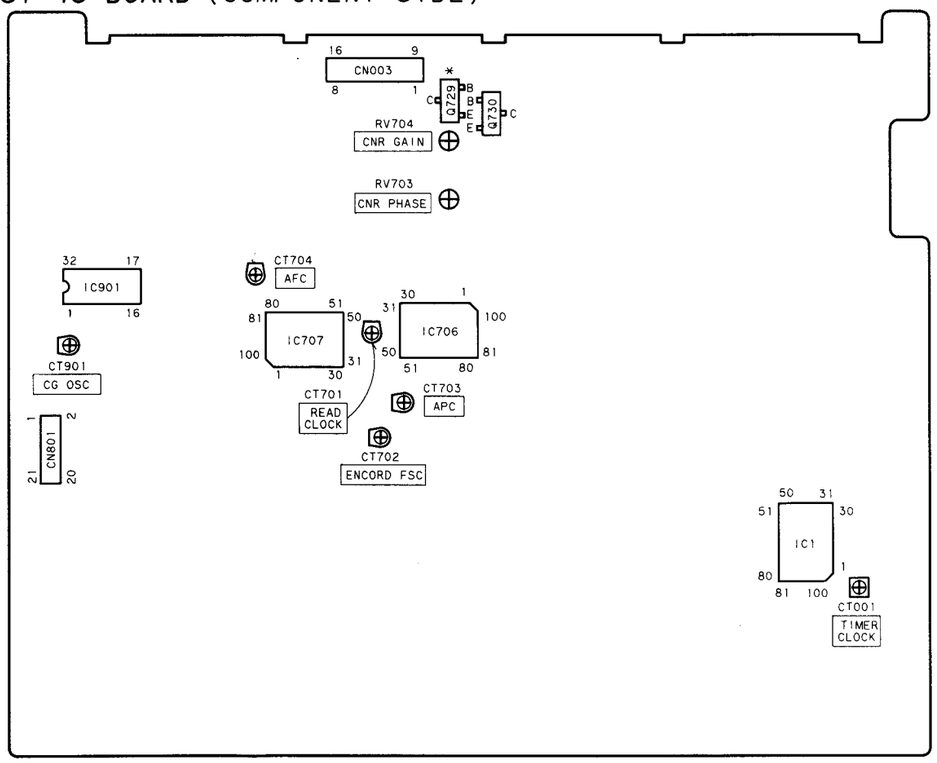
TU-100 BOARD (COMPONENT SIDE) (EV-S880E only)



VA-79 BOARD (COMPONENT SIDE)



ST-48 BOARD (COMPONENT SIDE)



*Indicates a adjustment element mounted on the conductor side.